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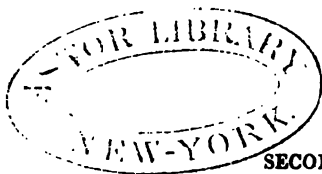
Great Britain

O.Y.S.



THE
NAUTICAL ALMANAC
AND
ASTRONOMICAL EPHEMERIS
FOR THE YEAR
1820.

PUBLISHED BY ORDER OF THE
COMMISSIONERS OF LONGITUDE.



SECOND EDITION, CORRECTED.

LONDON :
PRINTED BY BENSLEY AND SON, BOLT COURT, FLEET STREET,
PRINTERS;
AND SOLD BY JOHN MURRAY, ALBEMARLE STREET,
BOOKSELLER
TO THE COMMISSIONERS.

1819.

[*Price Five Shillings.*]

EXTRACT from the ACT of PARLIAMENT concerning the Longitude, made in the Fifth Year of the Reign of His present Majesty.

WHEREAS the Publication of Nautical Almanacs constructed by proper Persons, under the Direction of the said Commissioners, would greatly contribute to make the said Lunar Tables more generally useful; Be it further Enacted, by the Authority aforesaid, That it shall and may be lawful to and for the said Commissioners to cause such Nautical Almanacs, or other useful Tables, to be constructed, and to print, publish, and vend, or cause to be printed, published, and vended, any Nautical Almanac or Almanacs, or other useful Table or Tables, which they, or the major Part of them, shall, from Time to Time, judge to be necessary and useful, in order to facilitate the Method of discovering the Longitude at Sea; any Law, Statute, exclusive Privilege, private Charter, or other Custom, to the contrary thereof notwithstanding.

And be it Enacted, by the Authority aforesaid, That no Person or Persons shall print, publish, or vend, or cause to be printed, published, or vended, any Nautical Almanac or Almanacs, or other Table or Tables, constructed under the Direction of the said Commissioners, without being first licensed by the said Commissioners, or the major Part of them. And if any Person or Persons not so licensed, or not being authorised by the Person or Persons so licensed by the said Commissioners, shall print, publish, or vend, or cause to be printed, published, or vended, any such Nautical Almanac or Almanacs, or other Table or Tables, every such Person or Persons shall, for every Copy of such Nautical Almanac or Table so printed, published, or vended, forfeit and pay the Sum of Twenty Pounds; to be recovered by Action of Debt, Bill, Complaint, or Information, in any of his Majesty's Courts of Record at *Westminster*; and that One Moiety of such Penalty and Forfeiture shall be to His Majesty, his Heirs, and Successors, and the other Moiety to him or them that shall prosecute, inform, or sue for the same.

PROVED
IN PARLIAMENT
AT WESTMINSTER
THE FIFTH YEAR OF THE REIGN OF HIS PRESENT MAJESTY.

EXTRACT of an Act for the Repeal of all former Acts concerning the Longitude at Sea, except so much thereof as relates to the Appointment and Authority of the Commissioners thereby constituted, and also such Clauses as relate to the constructing, printing, publishing, vending, and licensing of Nautical Almanacs and other useful Tables; and for the more effectual Encouragement and Reward of such Person and Persons as shall discover a Method for finding the same, or shall make useful Discoveries in Navigation; and for the better making Experiments relating thereto: made in the Fourteenth Year of the Reign of His present Majesty.

BE it enacted by the KING's Most Excellent Majesty, by and with the Advice and Consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the Authority of the same, That each and every of the said recited Acts (save and except such Clause and Clauses in each or any of them as relate to the Appointment or Authority of all or any of the Commissioners thereby respectively constituted, and also such Clause and Clauses as relate to the constructing, printing, publishing, vending, and licensing of Nautical Almanacs, and other useful Tables) shall, from and after the Twenty-fourth Day of *June* One thousand Seven hundred and Seventy-four, be, and are hereby repealed.

And, for a due and sufficient Encouragement to any Person or Persons who shall discover any Method or Methods for finding the said Longitude, Be it Enacted by the Authority aforesaid, That the First Author or Authors, Discoverer or Discoverers, of each and every such Method or Methods, his or their Executors, Administrators, or Assigns, shall be entitled to and have the Rewards or Sums of Money herein-after mentioned; that is to say, In case the Method proposed shall be, by means of a Time-keeper, the Principles whereof have not hitherto been made public, to the Reward or Sum of Five Thousand Pounds, if such Method determines the said Longitude to One Degree of a great Circle, or Sixty geographical Miles; to the Reward or Sum of Seven thousand Five hundred Pounds, if it determines the same to Two Thirds of that Distance; and to the Reward or Sum of Ten thousand Pounds, if it determines the same to one Half of the said Distance; Which respective Rewards shall be due and paid when such Method shall have been sufficiently tried by the following Experiments and

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Voyages to be made and performed by such Persons, and under such Restrictions, as the said Commissioners for the Discovery of Longitude at Sea respectively constituted by the above-recited Acts, or the major part of them, shall think fit to appoint and direct; (that is to say), When and so soon as Two or more Time-keepers of the same Construction shall have been tried at the same Time, for the Space of Twelve Months, at the Royal Observatory at *Greenwich*, then in Two Voyages round the Island of *Great Britain*, in contrary Directions, and in such other Voyages to different Climates as the said Commissioners shall think fit to direct and appoint: and after their Return from such Voyages, or any of them, for such longer Time, at the said Observatory, not exceeding Twelve Months, as the said Commissioners shall judge necessary; and also when and so soon as the said Commissioners, or Two Thirds of them at the least, shall, after such Experiments and Voyages have been made and performed as aforesaid, have declared and determined that such Method is generally practicable and useful, and sufficiently exact to determine the Longitude at Sea within the Degrees or Limits aforesaid in all Voyages for the Space of Six Months, (Impediments from cloudy and hazy Weather excepted); and also when and so soon as the Principles and Practice of such Method are fully discovered and explained to the Satisfaction of the said Commissioners, or Two Thirds of them at least; and such Author or Authors, Discoverer or Discoverers, shall have delivered up and assigned over to the said Commissioners, for the Use of the Public, the absolute Property of such Time-keepers as shall have been tried by such Experiments and Voyages as aforesaid, together with all Plates, Descriptions, Theories, and Explanations belonging or relating to the same, and which shall contain the Whole of such Discovery of the Longitude; and in case the Method proposed shall be by means of improved Solar and Lunar Tables, then and in such Case the Author or Authors of such improved Solar or Lunar Tables, their Executors, Administrators, or Assigns, shall be entitled to and have the Reward or Sum of Five Thousand Pounds, if such Solar and Lunar Tables shall prove sufficiently exact to shew the Distance of the Moon from the Sun and Stars in the Heavens within Fifteen Seconds of a Degree, answering to about Seven Minutes of Longitude, after making an Allowance of Half a Degree as the Errors of Observation; and when it shall appear to the Satisfaction of the said Commissioners, or Two Thirds of them at least, that such Tables are constructed entirely upon the Principles of Gravitation laid down by Sir *Isaac Newton* (except with respect to those Elements which must necessarily be taken from astronomical Observations), and also when the Truth of such Tables shall have been further confirmed and proved by Comparison with a Series of astronomical Observations made during a Period of Eighteen Years and a Half, which is deemed the Period of the Irregularities of the Lunar Motions; which Reward shall be due and paid, when the said Commissioners, or Two Thirds of them at least, shall have declared, and determined, that such Tables are sufficiently exact to shew the

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Distance of the Moon from the Sun and Stars in the Heavens, within the Limits above mentioned; and also when the Author or Authors of such improved Solar and Lunar Tables, his or their Executors, Administrators, or Assigns, shall have delivered up and assigned over to the said Commissioners, for the Use of the Public, the absolute Right and Property to and in the same, together with the Theory relating thereunto; and in case any other Method shall be proposed for finding the Longitude at Sea besides those before-mentioned, that then and in such Case the First Author or Authors, Discoverer or Discoverers, of any such Method, his or their Executors, Administrators, or Assigns, shall be entitled to and have the Reward or Sum of Five Thousand Pounds, if it shall determine the said Longitude within one Degree of a great Circle, or Sixty geographical Miles; to the Reward or Sum of Seven thousand Five hundred Pounds, if it shall determine the same to Two Thirds of that Distance; and to the Reward or Sum of Ten thousand Pounds, if it shall determine the same to One Half of the same Distance; which respective Rewards shall be due and paid, so soon as the said Commissioners, or Two Thirds of them at least, shall, after proper Trials have been made by their Appointment and Direction, have determined that such Method shall be generally practicable and useful for finding the Longitude at Sea within the respective Limits above-mentioned.

And be it further Enacted, by the Authority aforesaid, That when and so soon as any such Method or Methods, for the Discovery of the said Longitude, shall be tried, as before mentioned, and found practicable and useful at Sea, and sufficiently exact to determine the Longitude within any of the Degrees or Limits aforesaid, the said Commissioners, or Two Thirds of them, shall certify the same, under their Hands and Seals, to the Commissioners of the Navy for the Time being, together with the Name or Names of the Person or Persons who shall be the Author or Authors of such Method or Methods; and upon the Receipt of such Certificate, the said Commissioners of the Navy are hereby authorised and required to make out a Bill or Bills upon the Treasurer of the Navy for the respective Sum or Sums of Money to which the Author or Authors of such Proposal, his or their Executors, Administrators, or Assigns, shall be entitled by virtue of this Act; which Sum or Sums the said Treasurer is hereby required to pay to the said Author or Authors, their Executors, Administrators, or Assigns accordingly, out of any Money that may be in his Hands unapplied to the Use of the Navy, according to the true Intent and Meaning of this Act.

And be it further Enacted, by the Authority aforesaid, That the said Commissioners for the Discovery of Longitude at Sea, or any Five or more of them, shall have full Power and Authority to hear and receive any Proposal or Proposals that shall be made to them.

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for discovering the said Longitude, or for making any other useful Improvement in Navigation; and in case the said Commissioners, or any Five or more of them, shall be so far satisfied of the Probability of any such Discovery or Improvement as to think it proper to cause Experiments to be made thereof, they shall certify the same, together with the Names of the Author or Authors of such Proposal or Proposals, under their Hands and Seals, to the Commissioners of the Navy, who are hereby authorised and required to make out a Bill or Bills upon the Treasurer of the Navy for any such Sum or Sums of Money as the said Commissioners for the Discovery of Longitude at Sea, or any Five or more of them, shall think necessary for making such Experiments; which Sum or Sums the Treasurer of the Navy is hereby required to pay immediately to such Person or Persons as shall be appointed by the said Commissioners to make those Experiments, out of any Money which shall be in his the said Treasurer's Hands unapplied as aforesaid.

And be it further Enacted, by the Authority aforesaid, That if any Person or Persons shall make any Discovery for finding the Longitude at Sea, which, though not of so great Use as to be entitled to any of the great Rewards above specified, shall nevertheless be adjudged by the said Commissioners for the Discovery of Longitude at Sea, or the major Part of them, to be of considerable Use to the Public, or shall make any other Discovery or Discoveries, Improvement or Improvements, useful to Navigation; then, and in such Case, such Person or Persons, his or their Executors, Administrators, or Assigns, shall, from Time to Time, have and receive such less Reward or Sum or Sums of Money as the said Commissioners, or the major Part of them, shall think reasonable; and certify accordingly, under their Hands and Seals, to the Commissioners of the Navy, who are hereby authorised and required to make out a Bill or Bills upon the Treasurer of the Navy for any such Sum or Sums of Money, which the said Treasurer is hereby authorised and required to pay immediately to such Person or Persons, his or their Executors, Administrators, or Assigns, out of any Money that shall be in his the said Treasurer's Hands unapplied as aforesaid.

Provided also, and it is hereby further Enacted, That in case any Person or Persons who shall and may have received any Sum or Sums of Money, by virtue of this Act, as a Reward for any Method of discovering the Longitude at Sea, shall afterwards become entitled to any of the greater Rewards appointed by this Act, for or on account of the same Method; that then, and in such Case, such Sum or Sums of Money as they shall or may have received as aforesaid shall be considered as Part of such greater Reward, and deducted therefrom accordingly; and that no Person shall receive more in the Whole for any One Method for discovering the Longitude at Sea than the greatest Reward appointed for such Method by this Act.

By the COMMISSIONERS appointed by Acts of
Parliament for the Discovery of the Longitude
at Sea; and for examining, trying, and judging
of all Proposals, Experiments, and Improvements
relating to the same.

WE do hereby, in pursuance of the Powers vested in us by Acts of
Parliament, license, authorise, and empower you to print the
Nautical Almanacs and Astronomical Ephemerides for the Years
1819, 1820, 1821, and 1822; together with such other useful Tables
for facilitating the Method of discovering the Longitude at Sea, as
have been, or may be, constructed under our Direction, and which
will be delivered to you by, or by the Direction of, John Pond, Esq.
his Majesty's Astronomer Royal at *Greenwich*; for all which this shall
be your sufficient Warrant; reserving to ourselves, nevertheless, and
to our Successors, Commissioners of the aforesaid Board, or to the
major Part of them, Power to revoke and annul the Appointment
hereby made, by Writing signed by us, or them, whenever we or they
shall see Occasion. Given under our Hands the First Day of
June, 1815.

To
Mr. Thos. Bensley and Son,
Printers,
Bolt Court, Fleet Street.

JOS. BANKS, P. R. S.
JOHN POND, A. R.
A. ROBERTSON.
S. P. RIGAUD.
SAMUEL VINCE.
W. LAX.

By Command of the Commissioners,

T. HURD, R. N. Secretary.

By the COMMISSIONERS appointed by Acts of
Parliament for the Discovery of the Longitude
at Sea ; and for examining, trying, and judging
of all Proposals, Experiments, and Improvements
relating to the same.

WE do hereby, in pursuance of the Powers vested in us by Acts of
Parliament, license, authorise, and empower you to publish
and vend, and to cause to be published and vended, all such Nautical
Almanacs and Astronomical Ephemerides, and such other useful Tables,
constructed under our Direction, as have hitherto been printed or
shall hereafter be printed for the several Years next ensuing, down to
the Year 1820 inclusive. For all which this shall be your sufficient
Warrant ; reserving to ourselves, nevertheless ; and to our successors,
Commissioners of the said Board, or to the proper part of them, Power
to revoke and annul the Appointment hereby made, by Writing signed
by us, or them, whenever we or they shall see Occasion. Given under
our Hands the Sixteenth Day of *July*, 1811.

To
Mr. John Murray,
Bookseller,
Fleet Street.

R. BICKERTON.
J. W. CROKER.
Jos. BANKS, P. R. S.
JOHN POND, A. R.
A. ROBERTSON.
S. P. RIGAUD.
ISAAC MILNER.
SAMUEL VINCE.
W. LAX.

By Command of the Commissioners,

T. HURD, R. N. Secretary.

PREFACE.

THE Method of computing the NAUTICAL ALMANAC had been brought to so great a Degree of Perfection by the late Astronomer Royal, that nothing remained for his Successor but to follow the same Plan which he had so ably laid down: there are, however, some Circumstances relating to this Publication, of which it may not be improper that the Public should be informed.

A few Years previous to the Death of Dr. MASKELYNE, the Computations were thrown into considerable Confusion by the Death of the Rev. Mr. HITCHINS, who had held the Situation of Comparer for a great many Years. A Person qualified *immediately* to undertake this important Department was not easily to be found, for, besides the requisite Knowledge, it requires that practical Experience, which can only be acquired by Length of Time. To supply the Loss of Mr. HITCHINS, Dr. MASKELYNE had made Choice of the Rev. Mr. BROWN, of Tideswell, in Derbyshire; and at the first Meeting of the Board of Longitude, which I had the Honour to attend, in the Year 1811, this Gentleman was regularly appointed to the Situation of Comparer.

On the Death of Mr. HITCHINS, and during the Period that Mr. BROWN was receiving the necessary Instructions to succeed him, Dr. MASKELYNE was under the Necessity of assigning this Department of the NAUTICAL CALCULATIONS to those of the Computers whom he considered as the most skilful. It was about this Time, probably, that he gave Directions for omitting the Occultations of all the Stars, excepting some of the first and second Magnitudes: this was done partly to alleviate the Labours of the Computers, which had been much increased by the Introduction of the new LUNAR TABLES, and partly, no doubt, from the Conviction of the little Importance of these Occultations. But as Cases may possibly, though rarely, occur, in which corresponding Observations may be made of these small Stars, the Commissioners have given Directions that in the future these Occultations shall be inserted as formerly.

As it sometimes happened, that a whole Year elapsed without any Occultation taking place of those Stars selected by Dr. MASKELYNE for Computation, it was very naturally suggested that the Omission arose from neglect.

It happened likewise about the same Time, that the Obliquity of the Ecliptic was assumed rather differently from that given in the FRENCH TABLES; this was likewise attributed to an Oversight on the Part of the Computers: but so far was this from being the Case, that the late Astronomer Royal distinctly explained the Cause of this in his Preface, and the Reasons which afterwards induced him to alter his Opinion.

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But had this Error been ten Times greater than was supposed, it could never have been of Importance to Mariners, for whom this Publication is chiefly intended.

From the Circumstances above mentioned, some Errors, no doubt, did occur, but they were chiefly confined to the Calendar, Terms, and Moveable Feasts, and which it was the peculiar Province of the Comparer to attend to; but the Nautical Part was, I am persuaded, as correct as in the former Years; and every Part, I believe, examined by the late Astronomer Royal himself.

At the Time of my arrival at the Royal Observatory, shortly after Dr. MASKELYNE's Death, I found the Almanacs for 1814, 1815, 1816, and the Months of January, February, 1817, computed and ready for the Press. From that Period the Almanac has been calculated by the same Computers as before, under the Superintendence of Mr. BROWN, who, as I have already stated, is appointed the Comparer. Some Delay has taken place from the Substitution of M. BURCKHARDT's TABLES for those of Mr. BURG formerly employed. All the other Data remain as before. The Places of the Fixed Stars were always given to the Computers by Dr. MASKELYNE from the latest of his own Observations. It unfortunately was not in my Power to do the same. A new and more perfect Transit Instrument was absolutely necessary for this Purpose, but after five Years of impatient Expectation, it was only last Summer that this most important Addition was made to the Observatory. But though I have no doubt that Dr. MASKELYNE's CATALOGUE will, in Course of Years, be found to require occasional Correction; yet, for the Purposes of Nautical Astronomy, it will, nevertheless, even for many Years to come, be sufficiently exact. In the mean Time all the Stars employed in the NAUTICAL ALMANAC are sedulously observed with the new Instrument; and, in the Course of next Year, I hope to publish an approximate Catalogue, at least of these Stars, subject to such Corrections as a longer Series of Observations cannot fail to indicate. In the mean Time the Annual Catalogue given in the CONNAISSANCE DES TEMPS, may be safely taken for all Nautical Purposes, being carefully selected from the best Authorities.

From Respect to the Memory of the late Astronomer Royal, I have been directed by the Commissioners to continue his last Preface, omitting only such Parts as related to one particular Year.

GREENWICH,
January 1, 1817.

J. POND,
ASTRONOMER ROYAL.

[NOTE. The Moon's Place has been computed from BURG's Tables up to the end of 1820. T. Y.]

DR. MASKELYNE'S PREFACE.

THE Commissioners of Longitude, in Pursuance of the Powers vested in them by Act of Parliament, present the Public with the NAUTICAL ALMANAC and ASTRONOMICAL EPHEMERIS for the Year 1814, being the Forty-eighth Impression, to be continued annually; a Work which must greatly contribute to the Improvement of Astronomy, Geography, and Navigation. This EPHEMERIS contains every Thing essential to general Use that is to be found in any Ephemeris hitherto published, with many other useful and interesting Particulars never yet offered to the Public in any Work of this Kind. The Tables of the Moon had been brought by the late Professor MAYER, of *Gottingen*, to a sufficient Exactness to determine the Longitude at Sea, within a Degree, as appeared by the Trials of several Persons who made Use of them. The Difficulty and Length of the necessary Calculations seemed the only Obstacles to hinder them from becoming of general Use: To remove which this EPHEMERIS was made; the Mariner being hereby relieved from the Necessity of calculating the Moon's Place from the Tables, and afterwards computing the Distance to Seconds by Logarithms, which are the principal and only very delicate Part of the Calculation; so that the finding the Longitude by the Help of the EPHEMERIS is now in a Manner reduced to the Computation of the Time, an Operation equal to that of an Azimuth, and the Correction of the Distance on Account of Refraction and Parallax, which is also rendered very easy by Mr. LYONS', DUNTHORNE's, or WITCHELL's methods improved, or by my method, which are annexed to the Second and Third Editions of the REQUISITE TABLES; but still more so by the GENERAL TABLES, computed at great Expence by Order of the Commissioners of Longitude, and published in 1772; or by the method given by Mr. MENDOZA RIOS in his Complete Collection of Tables for Navigation and Nautical Astronomy, lately published by him, with the approbation and assistance both of the Commissioners of Longitude and the Directors of the East India Company.

MAYER's last Manuscript Tables of the Sun and Moon, and his curious and elaborate Theory of the Moon, were received by the

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Board of Longitude, after his decease, for which his Widow received a Reward of Three Thousand Pounds, by Act of Parliament, and the celebrated Mr. LEONARD EULER the Sum of Three Hundred Pounds for having furnished the Theorems made Use of by Mr. MAYER in his Theory. Both the Tables and Theory were printed under my Inspection, and published in 1770.

MAYER's Tables of the Sun were used in the Computations of the NAUTICAL ALMANAC, from its first beginning in 1767 to that of 1804, inclusive. From the NAUTICAL ALMANAC of 1767 to that of 1776, both inclusive, or the first ten Years, MAYER's Lunar Tables were made use of. But from the NAUTICAL ALMANAC of 1777 to that of 1783, both inclusive, or the next twelve Years, the Moon's Place was inserted as calculated from new Tables, improved from MAYER's Tables, composed by the late Mr. CHARLES MASON, under my direction, from Calculations made by Order of the Board of Longitude upon the Series of Lunar Observations made by the late Dr. BRADLEY, and published in the NAUTICAL ALMANAC of 1774; in which new Tables the Epoch of the Moon's mean Longitude is $1''$ less, that of the Apogee is $56''$ less, and that of the ascending Node $45''$ more than in MAYER's printed Tables, and the Equations are calculated to tenths of a second; and moreover one new Equation is introduced, whose argument is the mean Distance of the Moon from the Sun's Apogee, and maximum is $16''.4$. But from the NAUTICAL ALMANAC of 1789 to that of 1804, both inclusive, the Moon's Place was inserted as calculated from new Tables still farther corrected by Mr. MASON, entitled by him, TABLES of 1780, as having been completed about that Time, being rendered more exact than the former by the Addition of eight Equations to the Number in MAYER's Tables, taken from MAYER's Theory as to the Arguments, but settled as to the *Maxima*, from the said Observations, and the whole being calculated to Tenths of a Second. However the 18th Equation of these Tables was not used, as it was doubtful whether such an Equation should arise from the Theory of Gravity. Moreover the Epochs of the Sun's Longitude in MAYER's Tables, and of the Moon's Longitude and mean anomaly contained in MASON's Tables of 1780, were diminished at the rate of $10''$ in a hundred Years, reckoned from the year 1756, in the Calculations of the NAUTICAL ALMANACS from 1797 to 1804, both inclusive. Also the Longitudes of the Stars, used in computing their distances from the Moon, were carried on from Dr. BRADLEY's Catalogue of the year 1760, by subtracting $50''.35$ from it, for each year between 1756 and 1760, to reduce that Catalogue back to the beginning of 1756, and then adding at the rate of $50''.40$ for the Precession of the Equinoxes, for each year elapsed

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after 1756, and applying the Correction of Secular Motion derived from the 44th of the folio Tables annexed to the First Volume of my Astronomical Observations.

The Distances of the Stars from the Moon had been computed, till the end of the EPHEMERIS of 1802, from a set of folio Tables, constructed for each Star, according to its respective Latitude in 1780; but the distances in the EPHEMERIS from 1803 to 1808 were computed from the Latitudes corrected by my 45th Table, by making use of TAYLOR'S Tables of Logarithmic Sines and Tangents to every Second of the Quadrant.

The distances of the Moon from the nine principal fixed stars are, in this Ephemeris, as they were from that of 1809, computed from their longitudes and latitudes, which I have settled from late observations, and their annual variations, including their proper motions, by comparing them with Dr. Bradley's places of them; settled about the year 1756. The catalogue is inserted at the end of the explanation of the Ephemeris, p. 162.

The Calculations of the Planets' Places were made for the EPHEMERIS from 1780 to 1804, by the Tables contained in the Second Edition of M. DE LA LANDE'S Astronomy; and those of the Eclipses of Jupiter's Satellites were made from Mr. WARGENTIN'S Tables, which make a part of those Tables; excepting the Eclipses of Jupiter's Second Satellite, which were computed from the EPHEMERIS of 1781 to that of 1804, from new Tables of Mr. WARGENTIN published at the End of the Nautical Almanac of 1779.

In the Year 1792, came out the Third Edition of M. DE LA LANDE'S Astronomy, which he was pleased to make me a present of, containing new Tables of the Sun, Moon, and Planets, and of the Eclipses of Jupiter's Satellites. These Tables are constructed upon the best Observations, and upon the Physical Theories of M. LA GRANGE and M. DE LA PLACE, founded upon Sir ISAAC NEWTON'S Principles of Gravity. The Tables of the Sun were constructed by M. DE LAMBRE, entirely from my Observations; the Tables of the Moon are the same with Mr. CHARLES MASON'S Tables of 1780, only substituting M. DE LA PLACE'S Acceleration instead of MAYER'S, and diminishing the mean Secular Motion by 23". The Tables of Mercury, Venus, and Mars, were constructed by M. LA LANDE. The Tables of Jupiter and Saturn were constructed by M. DE LAMBRE from the Theory of M. DE LA PLACE, who has accounted for the great Inequalities of their Motion to great exactness. The Tables of the Planet Herschel, called the Georgian Planet by us, were also calculated by M. DE LAMBRE, according to the Method of M. DE LA PLACE'S Theory of Jupiter and Saturn. The Tables for calculating the Eclipses of Jupiter's Satellites were constructed by M. DE LAMBRE upon

PREFACE.

M. DE LA PLACE's elaborate Theory, and agree with Observation to surprising exactness. The learned world are much indebted to **Mr. CHARLES MASON, M. LA GRANGE, M. DE LA PLACE, M. LA LANDE, and M. DE LAMBRE**, for these valuable improvements in the Astronomical Tables. May I flatter myself, that I also have contributed my share to this great Work, by directing **Mr. MASON** in the improvement of the Lunar Tables by precise Rules, and pointing out to him the Equations contained in **MAYER's** Theory, though omitted in his Tables, to be ascertained by **BRADLEY's** Observations, and by supplying a variety of Observations, from which, in conjunction with others, this great Work has been completed?

In the year 1806, the French Board of Longitude published further improved Tables of the Sun by **M. DE LAMBRE**; and improved Tables of the Moon by **Mr. BURG**, founded on **M. DE LA PLACE's** Theory, with the maxima of the equations stated according to my observations, and the epochs principally from my observations and **Dr. BRADLEY's**. In these, besides **M. DE LA PLACE's** other improvements, is introduced a new equation of the Moon's longitude, of the long period of 180 years, depending at once on the Moon's apogee and node and on the Sun's apogee, whose maximum he states at 14", but of great consequence in settling the mean motions of the Moon. **Mr. BURG** has introduced six new equations, in addition to eight equations pointed out by **MAYER's** Theory, but whose maxima had been settled by **Mr. MASON**, from **Dr. BRADLEY's** observations. These Tables had been long expected, and our Board of Longitude had anticipated the important use which they should be applied to in the calculations of the Nautical Almanac.

I was moreover furnished with several copies of the same, by the favour of the French Board of Longitude. These I immediately put into the hands of our computers; and the publication of the Nautical and Astronomical Almanac for 1813 came out, for the first time, distinguished with this considerable improvement.

The epochs of these Tables having been adapted to the civil reckoning of time, and to the midnight with which the last day of the former year ends, and the new one begins, instead of the noon of the last day of the former year, as generally used in Astronomical Tables, I tried to adopt this method for the Nautical Almanac, but afterwards thought it best to relinquish it, and to retain the Astronomical time, fearing it would be attended with inconvenience, both in keeping the Register of the Greenwich Observations, and in puzzling the sailors by changing the method of using the Nautical Almanac.

The places of the planets, and the times of the eclipses of Jupi-

PREFACE.

ter's Satellites, beginning in the year 1805, have been calculated from the Tables annexed to the third edition of M. LA LANDE's Astronomy, and the eclipses of the satellites set down to mean time, instead of apparent time, as formerly.

The Rev. SAMUEL VINCE, Plumian Professor of Astronomy at Cambridge, having had an early communication of the new French Tables, and of the errata discovered in them by the comparer of the Nautical Almanac and myself, and having also noted several errata himself, has lately re-published them in a neat, elegant, and accurate manner, according to Astronomical time, together with the Tables of the planets (taking those of Mars from M. LE FRANCAIS LA LANDE's Tables in the *Connaissance des Temps* of the 12th year) and the eclipses of Jupiter's satellites from the third edition of M. LA LANDE's Astronomy. These will be used for the calculations of the Nautical Almanac for succeeding years.

All the Articles of the EPHEMERIS were computed by two separate Persons, and examined by a third, except the Moon's Longitude, Latitude, Right Ascension, Declination, Semidiameter, and Parallax, with its Proportional Logarithm, which for Noon, were computed by one Person, and for Midnight by another, and the Truth of these Calculations ascertained by Means of Differences, which, for the Moon's Longitude, were carried as far as the Fourth Order.

NEVIL MASKELYNE,

ASTRONOMER ROYAL.

GREENWICH,
September 25, 1810.

EXPLANATION OF THE CHARACTERS

USED IN THE

ASTRONOMICAL EPHEMERIS.

The PLANETS, &c.

☉ The Sun.	♂ Mars.
☾ The Moon.	♃ Jupiter.
☿ Mercury.	♄ Saturn.
♀ Venus.	♅ Georgian.
♁ The Earth.	

- ☾ The Moon's, or any other Planet's Ascending Node.
- ☿ The Descending Node.
- ♄ Conjunction, or Planets situated in the same Longitude.
- ☐ Quadrature, or Planets situated in Longitudes differing 3 Signs from each other.
- ♁ Opposition, or Planets situated in opposite Longitudes, or differing 6 Signs from each other.

N. North.	Inf. Inferior.	Im. Immersion.
S. South.	Sup. Superior.	Em. Emersion.

SIGNS of the ZODIAC.

S.	S.
0 ♈ Aries.	6 ♎ Libra.
1 ♉ Taurus.	7 ♏ Scorpio.
2 ♊ Gemini.	8 ♐ Sagittarius.
3 ♋ Cancer.	9 ♑ Capricornus.
4 ♌ Leo.	10 ♒ Aquarius.
5 ♍ Virgo.	11 ♓ Pisces.

PRINCIPAL ARTICLES

OF

THE ALMANAC OF 1820.

Chronological Cycles.

Dominical Letters	- - - B A
Lunar Cycle, or Golden Numb.	16
Epact	- - - - - 15
Solar Cycle	- - - - - 9
Roman Indiction	- - - - - 8
Julian Period	- - - - 6533

Ember Days.

February	- - - 23, 25, and 26
May	- - - 24, 26, and 27
September	- - - 20, 22, and 23
December	- - - 20, 22, and 23

MOVEABLE FEASTS.

Septuagesima Sunday	- Jan. 30	Low Sunday	- - - - - Apr. 9
Quinq. or Shrove Sunday	Feb. 13	Rogation Sunday	- - - May 7
Ash Wed. or 1st Day of Lent	16	Asc. Day, or Holy Thurs.	11
Mid-Lent Sunday	- - - Mar. 12	Whit Sunday	- - - 21
Palm Sunday	- - - - - 26	Trinity Sunday	- - - 28
EASTER DAY	- - - - Apr. 2	Advent Sunday	- - - - Dec. 3

TERMS.

London.			Oxford.		Cambridge.	
Names	Begins	Ends	Begins	Ends	Begins	Ends
Hilary, or Lent,	Jan. 24	Feb. 12	Jan. 14	Mar. 25	{ Jan. 13	
					{ Div. Feb. 17	Midn.
					{ March 24	
Easter,	April 19	May 15	April 12	May 20	{ April 12	
					{ Div. May 25	Noon.
					{ July 7	
Trinity,	June 2	June 21	May 24	July 8		
Michael.	Nov. 6	Nov. 28	Oct. 10	Dec. 18	{ Oct. 10	
					{ Div. Nov. 12	Midn.
					{ Dec. 16	

Oxford Act July 4. — Camb. Commencement July 4.

OBLIQUITY, &c.

Obliquity of the Ecliptic,	1820.	Equation of Equinoctial Points.
D. M. S.		S.
23. 27. 57, 8	Jan. 1.	— 2, 0
23. 27. 58, 5	Apr. 1.	— 0, 5
23. 27. 57, 6	July 1.	+ 1, 0
23. 27. 58, 3	Oct. 1.	+ 2, 4
23. 27. 57, 2	Dec. 31.	+ 4, 1

SOLAR AND LUNAR ECLIPSES

IN THE YEAR 1820.

March 14. *SUN eclipsed, invisible at Greenwich.*

♄ at 1^h. 20^m $\frac{2}{3}$ in Long. 11°. 23°. 55', ♄'s Lat. 43' $\frac{9}{10}$ S.
 ☉ will be centrally eclipsed on the Meridian, at 0^h. 46^m $\frac{3}{8}$,
 in Long 11°, 42' $\frac{3}{4}$ West, and Lat. 56°. 32' $\frac{3}{4}$ S.

March 29. *MOON eclipsed, partly visible at Greenwich.*

	H. M.
Beginning of the Eclipse	5. 16 $\frac{5}{8}$
Moon rises eclipsed	6. 17
Middle of Eclipse	6. 37 $\frac{9}{10}$
Ecliptic ☿	6. 46 $\frac{1}{2}$
End of the Eclipse	7. 58 $\frac{9}{10}$
Digits eclipsed, 6°. 12', from S. side of ☉'s shadow, or on ♄'s Northern Limb.	

Sept. 7. *SUN eclipsed, visible at Greenwich.*

	H. M.
Beginning of the Eclipse	0. 24 $\frac{1}{2}$
Visible ☿	1. 50 $\frac{1}{2}$
Greatest Obscuration	1. 53
End of the Eclipse	3. 16 $\frac{3}{4}$ /
Digits eclipsed, 10°. 27' $\frac{1}{2}$ on ☉'s Northern Limb.	

Sept. 21. *MOON eclipsed, partly visible at Greenwich.*

	H. M.
Beginning of the Eclipse	17. 13 $\frac{3}{4}$
Moon sets	17. 57 $\frac{1}{2}$
Middle	18. 41 $\frac{9}{10}$
Ecliptic ☿	18. 47 $\frac{1}{2}$
End of the Eclipse	20. 10 $\frac{3}{4}$
Digits eclipsed 10°. 12' from N. side of ☉'s shadow, or on ♄'s Southern Limb.	

Days of the Week.	Days of the Month.		<i>Phases of the MOON.</i>	
		<i>Sundays, Holidays, Terms, &c.</i>		D. H. M. ☾ <i>Last Quarter</i> - - - 8. 4. 22 ● <i>New Moon</i> - - - 15. 4. 53 ☽ <i>First Quarter</i> - - - 21. 20. 42 ○ <i>Full Moon</i> - - - 29. 17. 45
			<i>Other Phenomena.</i>	
Sa.	1	<i>Circumcision.</i>	D. H. M. 1. 19. 20 ☽ ♂ a near appulse. 8. 12. 1 ☽ α ♉. 11. 23. 38 ☽ α ♈. 18. 11. 27 ♀ ♀ 47' S. of ♀. 19. 8. 7 ☽ ♄. 20. 13. 28 ☾ enters ♏. 25. 16. 2 ☽ ♄.	
Sun.	2	<i>2d Sund. after Christmas.</i>		
M.	3			
Tu.	4			
W.	5			
Th.	6	<i>Epiphany,</i>		
F.	7			
Sa.	8	<i>Lucian.</i>		
Sun.	9	<i>1st Sun. after Epiphany.</i>		
M.	10			
Tu.	11			
W.	12			
Th.	13	<i>Cam. Hilary Term, beg.</i>		
F.	14	<i>Oxford Term beg.</i>		
Sa.	15			
Sun.	16	<i>2d Sunday after Epiph.</i>		
M.	17			
Tu.	18	<i>Prisca.</i>		
W.	19			
Th.	20	<i>Fabian. In 8 d. of St. Hil.</i>		
F.	21	<i>Agnes.</i> [1 ret.		
Sa.	22	<i>Vincent.</i>		
Sun.	23	<i>3d Sun. after Epiphany.</i>		
M.	24	<i>Hilary Term begins.</i>		
Tu.	25	<i>Conversion of St. Paul.</i>		
W.	26			
Th.	27	<i>D. of Sussex born. In 15</i>		
F.	28	<i>[days of St. Hil. 2 ret.</i>		
Sa.	29			
Sun.	30	<i>Septuagesima Sunday.</i>		
M.	31	<i>[K. Charles I. mar.</i>		

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time.	Diff.
		Longitude.	Rt. Ascen.	Declin.	Add to app. Time.	
			in Time.			
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Sa.	1	9. 10. 3. 48	18. 43. 47, 9	23. 5. 2	3. 33, 3	
Sun.	2	9. 11. 4. 58	18. 48. 13, 0	23. 0. 10	4. 1, 8	28, 5
M.	3	9. 12. 6. 8	18. 52. 37, 7	22. 54. 51	4. 29, 9	28, 1
Tu.	4	9. 13. 7. 18	18. 57. 2, 0	22. 49. 5	4. 57, 6	27, 7
W.	5	9. 14. 8. 29	19. 1. 26, 0	22. 42. 52	5. 25, 0	27, 4
						26, 9
Th.	6	9. 15. 9. 39	19. 5. 49, 6	22. 36. 11	5. 51, 9	26, 4
F.	7	9. 16. 10. 49	19. 10. 12, 7	22. 29. 4	6. 18, 3	26, 0
Sa.	8	9. 17. 11. 59	19. 14. 35, 3	22. 21. 30	6. 44, 3	25, 6
Sun.	9	9. 18. 13. 9	19. 18. 57, 5	22. 13. 29	7. 9, 9	25, 0
M.	10	9. 19. 14. 19	19. 23. 19, 2	22. 5. 3	7. 34, 9	24, 5
						24, 0
Tu.	11	9. 20. 15. 30	19. 27. 40, 3	21. 56. 10	7. 59, 4	23, 3
W.	12	9. 21. 16. 40	19. 32. 0, 8	21. 46. 52	8. 23, 4	22, 8
Th.	13	9. 22. 17. 50	19. 36. 20, 8	21. 37. 8	8. 46, 7	22, 0
F.	14	9. 23. 19. 0	19. 40. 40, 2	21. 26. 58	9. 9, 5	21, 4
Sa.	15	9. 24. 20. 9	19. 44. 58, 9	21. 16. 25	9. 31, 5	20, 7
						20, 1
Sun.	16	9. 25. 21. 17	19. 49. 16, 9	21. 5. 27	9. 52, 9	19, 3
M.	17	9. 26. 22. 25	19. 53. 34, 3	20. 54. 4	10. 13, 6	18, 5
Tu.	18	9. 27. 23. 33	19. 57. 50, 9	20. 42. 18	10. 33, 7	17, 8
W.	19	9. 28. 24. 39	20. 2. 6, 8	20. 30. 8	10. 53, 0	17, 0
Th.	20	9. 29. 25. 44	20. 6. 21, 9	20. 17. 35	11. 11, 5	16, 1
						15, 4
F.	21	10. 0. 26. 48	20. 10. 36, 3	20. 4. 39	11. 29, 3	14, 6
Sa.	22	10. 1. 27. 51	20. 14. 49, 9	19. 51. 21	11. 46, 3	13, 7
Sun.	23	10. 2. 28. 53	20. 19. 2, 7	19. 37. 41	12. 2, 4	12, 9
M.	24	10. 3. 29. 54	20. 23. 14, 6	19. 23. 39	12. 17, 8	12, 1
Tu.	25	10. 4. 30. 53	20. 27. 25, 8	19. 9. 15	12. 32, 4	11, 3
						10, 4
W.	26	10. 5. 31. 51	20. 31. 36, 1	18. 54. 31	12. 46, 1	9, 6
Th.	27	10. 6. 32. 48	20. 35. 45, 6	18. 39. 26	12. 59, 0	
F.	28	10. 7. 33. 44	20. 39. 54, 3	18. 24. 1	13. 11, 1	
Sa.	29	10. 8. 34. 39	20. 44. 2, 2	18. 8. 15	13. 22, 4	
Sun.	30	10. 9. 35. 33	20. 48. 9, 2	17. 52. 11	13. 32, 8	
M.	31	10. 10. 36. 26	20. 52. 15, 5	17. 35. 48	13. 42, 4	

Days.	Time of ☉'s Semidiam. pass ^g . Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter.	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 10. 8	16. 17. 8	2. 32. 9	9. 99255	0. 6. 26
7	1. 10. 5	16. 17. 7	2. 32. 9	9. 99259	0. 6. 6
13	1. 10. 1	16. 17. 4	2. 32. 8	9. 99272	0. 5. 47
19	1. 9. 5	16. 17. 0	2. 32. 7	9. 99292	0. 5. 28
25	1. 8. 9	16. 16. 3	2. 32. 5	9. 99320	0. 5. 9

ECLIPSES OF THE SATELLITES OF JUPITER.
MEAN TIME.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emersions.</i>		<i>Emersions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	21. 46. 0	*3	4. 53. 15	3	22. 3. 35 Im.
3	16. 14. 46	6	18. 11. 32	4	1. 34. 46 E.
5	10. 43. 37	10	7. 30. 9	11	2. 5. 5 Im.
*7	5. 12. 23	13	20. 48. 26	*11	5. 35. 54 E.
8	23. 41. 11	17	10. 7. 8	18	6. 6. 3 Im.
10	18. 9. 50			18	9. 36. 30 E.
12	12. 38. 44				
14	7. 7. 29				
16	1. 36. 16				
17	20. 4. 59				
19	14. 33. 45				
IV. Satellite.					
1	16. 49. 24 Im.				
1	21. 33. 41 E.				
18	11. 3. 22 Im.				
18	15. 46. 19 E.				

THE PLANETS'								
Days	Heliocentric		Geocentric		Declin.	Rt. Asc.	Passage	
	Long.	Lat.	Long.	Lat.		in Time.	Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	H. M.	
♿ MERCURY. Gr. Elong. 13 ^d .								
1	4. 23. 47	6. 56 N	8. 22. 12	3. 5 N	20. 9 S	17. 27	22. 39	
4	5. 8. 17	6. 29	8. 22. 19	2. 49	20. 26	17. 27	22. 28	
7	5. 21. 25	5. 44	8. 23. 37	2. 26	20. 53	17. 32	22. 21	
10	6. 3. 23	4. 46	8. 25. 48	1. 59	21. 25	17. 42	22. 18	
13	6. 14. 22	3. 42	8. 28. 33	1. 30	21. 57	17. 54	22. 18	
16	6. 24. 32	2. 36	9. 1. 47	1. 2	22. 25	18. 8	22. 20	
19	7. 4. 4	1. 29	9. 5. 22	0. 36	22. 45	18. 23	22. 23	
22	7. 13. 7	0. 23 N	9. 9. 12	0. 10 N	22. 58	18. 40	22. 27	
25	7. 21. 48	0. 41 S	9. 13. 14	0. 15 S	23. 8	18. 58	22. 32	
28	8. 0. 14	1. 42	9. 17. 25	0. 38	22. 58	19. 16	22. 38	
31	8. 8. 32	2. 39	9. 21. 44	0. 58	22. 40	19. 35	22. 45	
♀ VENUS.								
1	10. 28. 42	3. 15 S	10. 0. 30	1. 31 S	21. 33 S	20. 12	1. 28	
7	11. 8. 13	3. 22	10. 8. 0	1. 35	19. 49	20. 43	1. 33	
13	11. 17. 44	3. 23	10. 15. 29	1. 37	17. 45	21. 14	1. 38	
19	11. 27. 16	3. 19	10. 22. 58	1. 37	15. 24	21. 44	1. 42	
25	0. 6. 49	3. 9	11. 0. 25	1. 33	12. 48	22. 12	1. 45	
♂ MARS. ♄ 16 ^d . 10 ^h ½.								
1	3. 18. 43	1. 37 N	4. 1. 37	3. 56 N	23. 40 N	8. 19	13. 32	
7	3. 21. 29	1. 39	3. 29. 30	4. 7	24. 18	8. 10	12. 57	
13	3. 24. 14	1. 41	3. 27. 10	4. 15	24. 55	8. 0	12. 21	
19	3. 26. 58	1. 43	3. 24. 47	4. 19	25. 27	7. 50	11. 45	
25	3. 29. 41	1. 45	3. 22. 29	4. 20	25. 52	7. 40	11. 10	
♃ JUPITER.								
1	10. 25. 25	0. 58 S	10. 18. 26	0. 50 S	16. 7 S	21. 25	2. 49	
7	10. 25. 57	0. 58	10. 19. 44	0. 50	15. 43	21. 30	2. 19	
13	10. 26. 29	0. 59	10. 21. 4	0. 50	15. 17	21. 34	1. 58	
19	10. 27. 1	0. 59	10. 22. 26	0. 50	14. 50	21. 40	1. 38	
25	10. 27. 33	1. 0	10. 23. 50	0. 50	14. 23	21. 45	1. 18	
♄ SATURN.								
1	0. 0. 45	2. 20 S	11. 25. 1	2. 16 S	4. 4 S	23. 45	5. 1	
7	0. 0. 58	2. 20	11. 25. 24	2. 15	3. 54	23. 47	4. 36	
13	0. 1. 10	2. 20	11. 25. 50	2. 14	3. 43	23. 48	4. 11	
19	0. 1. 22	2. 20	11. 26. 19	2. 13	3. 31	23. 50	3. 47	
25	0. 1. 34	2. 20	11. 26. 51	2. 12	3. 17	23. 52	3. 24	
♅ GEORGIAN.								
1	8. 24. 51	0. 9 S	8. 25. 35	0. 9 S	23. 33 S	17. 41	22. 53	
11	8. 24. 58	0. 10	8. 26. 10	0. 9	23. 34	17. 43	22. 12	
21	8. 25. 5	0. 10	8. 26. 43	0. 9	23. 35	17. 46	21. 32	

Days of the Week.	Days of the Month.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Sa.	1	3. 21. 37. 58	3. 27. 39. 49	4. 48. 26 N	4. 38. 23 N
Sun.	2	4. 3. 39. 51	4. 9. 38. 5	4. 25. 16	4. 9. 16
M.	3	4. 15. 34. 40	4. 21. 29. 56	3. 50. 36	3. 29. 28
Tu.	4	4. 27. 24. 23	5. 3. 18. 24	3. 6. 5	2. 40. 42
W.	5	5. 9. 12. 25	5. 15. 6. 57	2. 13. 32	1. 44. 51
Th.	6	5. 21. 2. 33	5. 26. 59. 51	1. 14. 55	0. 44. 0 N
F.	7	6. 2. 59. 30	6. 9. 2. 10	0. 12. 22 N	0. 19. 42 S
Sa.	8	6. 15. 8. 32	6. 21. 19. 17	0. 51. 52 S	1. 23. 48
Sun.	9	6. 27. 35. 6	7. 3. 56. 37	1. 55. 9	2. 25. 33
M.	10	7. 10. 24. 26	7. 16. 59. 5	2. 54. 34	3. 21. 47
Tu.	11	7. 23. 40. 57	8. 0. 30. 18	3. 46. 43	4. 8. 52
W.	12	8. 7. 27. 14	8. 14. 31. 39	4. 27. 45	4. 42. 53
Th.	13	8. 21. 43. 15	8. 29. 1. 28	4. 53. 50	5. 0. 11
F.	14	9. 6. 25. 34	9. 13. 54. 34	5. 1. 36	4. 57. 53
Sa.	15	9. 21. 27. 18	9. 29. 2. 28	4. 48. 58	4. 34. 55
Sun.	16	10. 6. 38. 44	10. 14. 14. 42	4. 15. 56	3. 52. 24
M.	17	10. 21. 49. 4	10. 29. 20. 36	3. 24. 48	2. 53. 46
Tu.	18	11. 6. 48. 16	11. 14. 11. 15	2. 19. 58	1. 44. 6
W.	19	11. 21. 28. 52	11. 28. 40. 42	1. 6. 53 S	0. 29. 2 S
Th.	20	0. 5. 46. 30	0. 12. 46. 10	0. 8. 46 N	0. 45. 55 N
F.	21	0. 19. 39. 48	0. 26. 27. 34	1. 21. 52	1. 56. 9
Sa.	22	1. 3. 9. 44	1. 9. 46. 41	2. 28. 21	2. 58. 7
Sun.	23	1. 16. 18. 45	1. 22. 46. 19	3. 25. 9	3. 49. 14
M.	24	1. 29. 9. 48	2. 5. 29. 33	4. 10. 10	4. 27. 47
Tu.	25	2. 11. 45. 58	2. 17. 59. 22	4. 42. 0	4. 52. 44
W.	26	2. 24. 10. 4	3. 0. 18. 20	4. 59. 57	5. 3. 40
Th.	27	3. 6. 24. 24	3. 12. 28. 30	5. 3. 52	5. 0. 36
F.	28	3. 18. 30. 49	3. 24. 31. 30	4. 53. 59	4. 44. 7
Sa.	29	4. 0. 30. 45	4. 6. 28. 42	4. 31. 8	4. 15. 13
Sun.	30	4. 12. 25. 31	4. 18. 21. 25	3. 56. 32	3. 35. 18
M.	31	4. 24. 16. 33	5. 0. 11. 9	3. 11. 44	2. 46. 6

Days of the Week.	Days of the Month.	THE MOON'S					
		Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	Midnight	Noon.	Midnight.
				D. M.	D. M.	D. M.	D. M.
Sa.	1	17	13. 19	114. 14	120. 45	26. 28 N	25. 12 N
Sun.	2	18	14. 6	127. 6	133. 17	23. 39	21. 51
M.	3	19	14. 50	139. 16	145. 4	19. 51	17. 39
Tu.	4	20	15. 31	150. 43	156. 14	15. 18	12. 48
W.	5	21	16. 11	161. 38	166. 58	10. 11	7. 28
Th.	6	22	16. 50	172. 15	177. 31	4. 41 N	1. 51 N
F.	7	23	17. 29	182. 49	188. 10	1. 1 S	3. 54 S
Sa.	8	24	18. 11	193. 36	199. 10	6. 46	9. 37
Sun.	9	25	18. 56	204. 54	210. 50	12. 25	15. 8
M.	10	26	19. 45	217. 1	223. 29	17. 43	20. 9
Tu.	11	27	20. 40	230. 16	237. 23	22. 23	24. 20
W.	12	28	21. 40	244. 50	252. 36	25. 58	27. 15
Th.	13	29	22. 45	260. 38	268. 54	28. 6	28. 28
F.	14	30	23. 51	277. 17	285. 41	28. 20	27. 41
Sa.	15	1	♄	294. 2	302. 14	26. 30	24. 51
Sun.	16	2	0. 55	310. 12	317. 55	22. 46	20. 17
M.	17	3	1. 53	325. 21	332. 31	17. 29	14. 26
Tu.	18	4	2. 46	339. 26	346. 7	11. 12	7. 50
W.	19	5	3. 36	352. 37	358. 59	4. 24 S	0. 58 S
Th.	20	6	4. 23	5. 15	11. 27	2. 26 N	5. 45 N
F.	21	7	5. 10	17. 37	23. 49	8. 57	12. 1
Sa.	22	8	5. 57	30. 4	36. 23	14. 54	17. 34
Sun.	23	9	6. 45	42. 48	49. 19	20. 0	22. 11
M.	24	10	7. 36	55. 57	62. 42	24. 4	25. 38
Tu.	25	11	8. 29	69. 32	76. 27	26. 53	27. 47
W.	26	12	9. 22	83. 24	90. 21	28. 20	28. 32
Th.	27	13	10. 15	97. 15	104. 5	28. 22	27. 52
F.	28	14	11. 6	110. 49	117. 23	27. 2	25. 54
Sa.	29	15	11. 54	123. 47	130. 1	24. 28	22. 47
Sun.	30	16	12. 39	136. 5	141. 58	20. 52	18. 45
M.	31	17	13. 21	147. 42	153. 17	16. 27	14. 1

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight	Noon.	Midnight		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
Sa.	1	14. 51	14. 49	54. 25	54. 17	5195	5206
Sun.	2	14. 47	14. 46	54. 11	54. 6	5214	5221
M.	3	14. 45	14. 45	54. 1	54. 1	5227	5227
Tu.	4	14. 45	14. 45	54. 2	54. 3	5226	5223
W.	5	14. 46	14. 48	54. 7	54. 13	5219	5211
Th.	6	14. 50	14. 58	54. 23	54. 33	5198	5185
F.	7	14. 57	15. 1	54. 46	55. 2	5168	5146
Sa.	8	15. 6	15. 12	55. 20	55. 41	5124	5095
Sun.	9	15. 18	15. 25	56. 4	56. 29	5066	5034
M.	10	15. 32	15. 40	56. 55	57. 23	5000	4965
Tu.	11	15. 48	15. 55	57. 52	58. 20	4928	4894
W.	12	16. 3	16. 10	58. 48	59. 16	4859	4825
Th.	13	16. 18	16. 24	59. 43	60. 6	4792	4764
F.	14	16. 29	16. 34	60. 26	60. 43	4740	4720
Sa.	15	16. 38	16. 40	60. 56	61. 4	4704	4695
Sun.	16	16. 41	16. 41	61. 8	61. 8	4690	4690
M.	17	16. 40	16. 36	61. 3	60. 53	4696	4708
Tu.	18	16. 33	16. 28	60. 38	60. 20	4725	4747
W.	19	16. 23	16. 16	60. 0	59. 38	4771	4798
Th.	20	16. 10	16. 3	59. 14	58. 49	4827	4858
F.	21	15. 56	15. 49	58. 24	57. 59	4889	4920
Sa.	22	15. 43	15. 36	57. 34	57. 10	4951	4981
Sun.	23	15. 30	15. 24	56. 47	56. 26	5011	5037
M.	24	15. 19	15. 13	56. 6	55. 47	5063	5088
Tu.	25	15. 9	15. 5	55. 30	55. 15	5110	5129
W.	26	15. 1	14. 57	55. 1	54. 48	5148	5165
Th.	27	14. 54	14. 52	54. 37	54. 28	5179	5191
F.	28	14. 49	14. 48	54. 19	54. 12	5203	5213
Sa.	29	14. 46	14. 45	54. 6	54. 1	5221	5227
Sun.	30	14. 44	14. 43	53. 58	53. 56	5231	5234
M.	31	14. 43	14. 43	53. 55	53. 56	5235	5234

Stars' Names.	Days	Noon.		III ^a .		VI ^a .		IX ^a .		Midnight		XV ^a .		XVIII ^a .		XXI ^a .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Aldebaran.	20	61. 39. 36	59. 55. 49	58. 12. 29	56. 29. 37	54. 47. 13	53. 5. 18	51. 23. 53	49. 42. 58								
	21	48. 2. 32	40. 22. 38	44. 43. 16	43. 4. 28	41. 26. 14	39. 48. 36	38. 11. 35	36. 35. 11								
	22	34. 59. 27	33. 24. 27	31. 50. 14	30. 10. 49	28. 44. 12	- - -	- - -	- - -								
Pollux.	22	- - -	- - -	- - -	- - -	70. 45. 16	69. 6. 45	67. 28. 33	65. 50. 40								
	23	04. 13. 6	62. 35. 50	60. 58. 52	59. 22. 12	57. 45. 48	56. 9. 41	54. 33. 51	52. 58. 17								
	24	51. 22. 58	49. 47. 55	48. 13. 7	46. 38. 33	45. 4. 14	43. 30. 8	41. 56. 15	40. 22. 36								
	25	38. 49. 10	37. 15. 56	35. 42. 55	34. 10. 5	32. 37. 28	- - -	- - -	- - -								
Regulus.	25	- - -	- - -	- - -	- - -	69. 22. 47	67. 50. 17	66. 17. 58	64. 45. 49								
	26	63. 13. 50	61. 42. 0	60. 10. 20	58. 38. 49	57. 7. 27	55. 36. 13	54. 5. 8	52. 34. 11								
	27	51. 3. 22	49. 32. 40	48. 2. 5	46. 31. 38	45. 1. 18	43. 31. 5	42. 0. 58	40. 30. 58								
	28	39. 1. 5	37. 31. 18	36. 1. 37	34. 32. 2	33. 2. 33	31. 33. 10	30. 3. 54	28. 34. 43								
Spica η .	29	27. 5. 38	- - -	- - -	- - -	- - -	- - -	- - -	- - -								
	29	81. 0. 59	79. 31. 35	78. 2. 15	76. 32. 58	75. 3. 45	73. 34. 35	72. 5. 28	70. 36. 24								
	30	69. 7. 22	67. 38. 23	66. 9. 26	64. 40. 30	63. 11. 37	61. 42. 46	60. 13. 56	58. 45. 7								
	31	57. 16. 20	55. 47. 34	54. 18. 48	52. 50. 3	51. 21. 18	49. 52. 33	48. 23. 47	46. 55. 1								
F. 1		45. 26. 15	- - -	- - -	- - -	- - -	- - -	- - -	- - -								

DISTANCES of Moon's Centre from SUN, and from STARS <i>WEST</i> of her.																	
Stars' Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.	XV ^h .		XVIII ^h .		XXI ^h .		
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.		D.	M. S.	D.	M. S.	D.	M. S.	
Aldebaran.	1	45.	28. 23	46.	56. 11	48.	23. 59	49.	51. 46	51.	19. 33	52.	47. 20	54.	15. 7	55.	42. 53
	2	57.	10. 36	58.	38. 17	60.	5. 56	61.	33. 33	63.	1. 7	64.	28. 38	65.	56. 7	67.	23. 34
	3	68.	50. 58	70.	18. 20	71.	45. 40	73.	12. 59	74.	40. 16	76.	7. 33	77.	34. 50	79.	2. 6
	4	80.	29. 23	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pollux.	4	36.	42. 1	38.	10. 31	39.	39. 1	41.	7. 32	42.	36. 3	44.	4. 35	45.	33. 10	47.	1. 47
	5	48.	30. 26	49.	59. 8	51.	27. 54	52.	56. 43	54.	25. 37	55.	54. 36	57.	23. 40	58.	52. 50
	6	60.	22. 6	61.	51. 29	63.	21. 0	64.	50. 39	66.	20. 27	67.	50. 24	69.	20. 31	70.	50. 49
	7	72.	21. 17	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Regulus.	7	35.	39. 42	37.	10. 8	38.	40. 48	40.	11. 41	41.	42. 47	43.	14. 8	44.	45. 44	46.	17. 36
	8	47.	49. 44	49.	22. 8	50.	54. 50	52.	27. 50	54.	1. 7	55.	34. 43	57.	8. 40	58.	42. 56
	9	60.	17. 31	61.	52. 27	63.	27. 45	65.	3. 25	66.	39. 27	68.	15. 52	69.	52. 40	71.	29. 52
	10	73.	7. 28	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spica μ .	10	19.	4. 48	20.	42. 52	22.	21. 21	24.	0. 16	25.	39. 37	27.	19. 24	28.	59. 37	30.	40. 17
	11	32.	21. 23	34.	2. 56	35.	44. 56	37.	27. 23	39.	10. 16	40.	53. 37	42.	37. 26	44.	21. 42
	12	46.	6. 24	47.	51. 33	49.	37. 9	51.	23. 12	53.	9. 41	-	-	-	-	-	-

Stars' Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV.		XVIII ^h .		XXI ^h .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	
The Sun.	18	39. 28. 11	41. 11. 11	42. 53. 56	44. 36. 25	46. 18. 39	48. 0. 37	49. 42. 17	51. 23. 38								
	19	53. 4. 42	54. 45. 20	56. 25. 49	58. 5. 52	59. 45. 35	61. 24. 56	63. 3. 54	64. 42. 31								
	20	66. 20. 46	67. 58. 38	69. 36. 8	71. 13. 15	72. 50. 0	74. 26. 22	76. 2. 21	77. 37. 57								
	21	79. 13. 11	80. 48. 3	82. 22. 32	83. 56. 39	85. 30. 24	87. 3. 47	88. 36. 48	90. 9. 28								
	22	91. 41. 47	93. 13. 45	94. 45. 23	96. 16. 42	97. 47. 41	99. 18. 20	100. 48. 39	102. 18. 40								
	23	103. 48. 22	105. 17. 45	106. 46. 51	108. 15. 40	109. 44. 11	111. 12. 25	112. 40. 24	114. 8. 6								
	24	115. 35. 32	117. 2. 43	118. 29. 39	119. 56. 20	121. 22. 47	-	-	-	-							
	25	-	-	-	-	58. 36. 59	60. 11. 22	61. 45. 36	63. 19. 42								
Fomalhaut.	22	64. 53. 39	66. 27. 27	68. 1. 4	69. 34. 30	71. 7. 44	72. 40. 46	74. 13. 30	75. 46. 13								
α Pegasi.	23	77. 18. 37	78. 50. 48	80. 22. 45	81. 54. 29	83. 25. 58	-	-	-								
	24	68. 3. 26	69. 31. 36	70. 50. 41	72. 27. 41	73. 55. 34	63. 38. 26	65. 0. 50	66. 35. 10								
	25	79. 45. 56	81. 13. 13	82. 40. 22	84. 7. 23	85. 34. 16	75. 23. 20	76. 50. 59	78. 18. 31								
α Arietis.	25	-	-	-	-	42. 45. 19	44. 16. 21	45. 47. 16	47. 18. 6								
	26	48. 48. 50	50. 19. 29	51. 50. 3	53. 20. 30	54. 50. 51	56. 21. 7	57. 51. 18	59. 21. 23								
	27	60. 51. 22	62. 21. 16	63. 51. 5	65. 20. 48	66. 50. 26	-	-	-								
Aldebaran.	27	-	-	-	-	36. 40. 49	38. 7. 27	39. 34. 12	41. 1. 4								
	28	42. 28. 2	43. 55. 5	45. 22. 12	46. 49. 23	48. 16. 37	49. 43. 53	51. 11. 10	52. 38. 29								
	29	54. 5. 50	55. 33. 11	57. 0. 32	58. 27. 54	59. 55. 16	61. 22. 38	62. 50. 0	64. 17. 22								
	30	65. 44. 43	-	-	-	-	-	-	-								
Pollux.	30	21. 45. 50	23. 14. 32	24. 43. 13	26. 11. 54	27. 40. 34	29. 9. 14	30. 37. 53	32. 6. 32								
	31	33. 35. 10	35. 3. 48	36. 32. 26	38. 1. 4	39. 29. 42	40. 58. 21	42. 27. 1	43. 55. 42								
	F. J	45. 24. 23	-	-	-	-	-	-	-								

CONFIGURATIONS of the SATELLITES of JUPITER,
at Half past V o'Clock in the *Evening*.

1	● 4.	.2	○	.1	.3	
2		4. 1.	○	.2	3.	
3		4.	.2	○	1. 3.	
4	4.	.2	1 6 3	○		
5	4.	3.	○	1.	.2	
6	4.	.3	○	.2		.1 ○
7		4.	.2	.3	1.	○
8		.4	.2	○	.1	.3
9			1 6 4	○	.2	.3
10	● 2.		○	.4	1. 3.	
11		.2 .1	.2	○		.4
12		3.	○	1 6 2		.4
13		.3	.1	○	3.	.4
14	● 1.		.2 .3	○		4.
15			.2	○	1	.3

Days of the Week.	Days of the Month.	<i>Sundays, Holidays, Terms, &c.</i>	<i>Phases of the MOON.</i>
			D. H. M. ☾ <i>Last Quarter</i> - - 6. 21. 14 ● <i>New Moon</i> - - - 13. 15. 16 ☽ <i>First Quarter</i> - - 20. 10. 14 ○ <i>Full Moon</i> - - - 28. 12. 54
			<i>Other Phenomena.</i>
Tu.	1		D. H. M.
W.	2	<i>Purif. of B.V. Mary.</i> [ret.	4. 18. 58 ☽ α ηγ.
Th.	3	<i>Blas. On Mor. of Pur.</i> 3	8. 8. 55 ☽ α η.
F.	4		15. 19. 31 ☽ ♀
Sa.	5	<i>Agatha.</i>	15. 22. 23 ☽ ♀.
Sun.	6	<i>Sexagesima Sunday.</i>	19. 4. 8 ☉ enters ♄.
M.	7		21. 21. 53 ☽ β γ.
Tu.	8		24. 0. 59 ☽ γ, ☽ 70' S. of γ.
W.	9	<i>In 8 days of Purif. 4 ret.</i>	24. 2. 2 ☽ δ.
Th.	10		27. 12. 23 ☽ α Ω.
F.	11		
Sa.	12	<i>Hilary Term ends.</i>	
Sun.	13	<i>Quinquagesima Sunday.</i>	
M.	14	<i>Valentine.</i>	
Tu.	15	<i>Shrove Tuesday.</i>	
W.	16	<i>Ash Wednesday.</i>	
Th.	17	<i>Camb. T. div. m.</i>	
F.	18		
Sa.	19		
Sun.	20	<i>1st Sunday in Lent.</i>	
M.	21		
Tu.	22		
W.	23		
Th.	24	<i>St. Matths. D. of Camb. b.</i>	
F.	25		
Sa.	26		
Sun.	27	<i>2d Sunday in Lent.</i>	
M.	28		
Tu.	29		

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Add to app. Time.</i>	Diff.
		Longitude.	Rt. Ascen. <i>in Time.</i>	Declin. <i>South.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Tu.	1	10. 11. 37. 18	20. 56. 20, 8	17. 19. 6	13. 51, 3	7, 9
W.	2	10. 12. 38. 8	21. 0. 25, 4	17. 2. 5	13. 59, 2	7, 2
Th.	3	10. 13. 38. 58	21. 4. 29, 2	16. 44. 46	14. 6, 4	6, 4
F.	4	10. 14. 39. 47	21. 8. 32, 1	16. 27. 10	14. 12, 8	5, 6
Sa.	5	10. 15. 40. 34	21. 12. 34, 3	16. 9. 17	14. 18, 4	4, 8
Sun.	6	10. 16. 41. 20	21. 16. 35, 6	15. 51. 7	14. 23, 2	4, 0
M.	7	10. 17. 42. 6	21. 20. 36, 2	15. 32. 41	14. 27, 2	3, 2
Tu.	8	10. 18. 42. 51	21. 24. 36, 0	15. 13. 58	14. 30, 4	2, 4
W.	9	10. 19. 43. 35	21. 28. 34, 9	14. 55. 1	14. 32, 8	1, 7
Th.	10	10. 20. 44. 17	21. 32. 33, 1	14. 35. 48	14. 34, 5	0, 8
F.	11	10. 21. 44. 58	21. 36. 30, 6	14. 16. 20	14. 35, 3	0, 1
Sa.	12	10. 22. 45. 38	21. 40. 27, 2	13. 56. 38	14. 35, 4	0, 6
Sun.	13	10. 23. 46. 17	21. 44. 23, 1	13. 36. 43	14. 34, 8	1, 4
M.	14	10. 24. 46. 54	21. 48. 18, 4	13. 16. 34	14. 33, 4	2, 2
Tu.	15	10. 25. 47. 30	21. 52. 12, 7	12. 56. 12	14. 31, 2	2, 9
W.	16	10. 26. 48. 4	21. 56. 6, 3	12. 35. 38	14. 28, 3	3, 6
Th.	17	10. 27. 48. 36	21. 59. 59, 2	12. 14. 51	14. 24, 7	4, 4
F.	18	10. 28. 49. 7	22. 3. 51, 4	11. 53. 53	14. 20, 3	5, 1
Sa.	19	10. 29. 49. 36	22. 7. 42, 9	11. 32. 44	14. 15, 2	5, 8
Sun.	20	11. 0. 50. 2	22. 11. 33, 6	11. 11. 24	14. 9, 4	6, 5
M.	21	11. 1. 50. 27	22. 15. 23, 6	10. 49. 54	14. 2, 9	7, 2
Tu.	22	11. 2. 50. 49	22. 19. 13, 0	10. 28. 14	13. 55, 7	7, 8
W.	23	11. 3. 51. 10	22. 23. 1, 7	10. 6. 24	13. 47, 9	8, 4
Th.	24	11. 4. 51. 28	22. 26. 49, 8	9. 44. 25	13. 39, 5	9, 2
F.	25	11. 5. 51. 45	22. 30. 37, 2	9. 22. 18	13. 30, 3	9, 7
Sa.	26	11. 6. 51. 59	22. 34. 24, 0	9. 0. 2	13. 20, 6	10, 2
Sun.	27	11. 7. 52. 12	22. 38. 10, 3	8. 37. 39	13. 10, 4	10, 9
M.	28	11. 8. 52. 23	22. 41. 55, 9	8. 15. 7	12. 59, 5	11, 4
Tu.	29	11. 9. 52. 32	22. 45. 41, 0	7. 52. 29	12. 48, 1	

Days	Time of ☉'s Semidiam. pass ^g Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semidia- meter.	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 8, 1	16. 15, 4	2. 32, 2	9. 99362	0. 4. 47
7	1. 7, 4	16. 14, 4	2. 31, 9	9. 99406	0. 4. 28
13	1. 6, 7	16. 13, 3	2. 31, 5	9. 99456	0. 4. 9
19	1. 6, 1	16. 12, 0	2. 31, 1	9. 99512	0. 3. 50
25	1. 5, 5	16. 10, 7	2. 30, 7	9. 99572	0. 3. 31

The Eclipses of the Satellites of Jupiter are not visible this Month,
Jupiter being too near the Sun.

Days	THE PLANETS'						
	Heliocentric		Geocentric		Declin.	Rt. Asc. in Time.	Passage Merid.
	Long.	Lat.	Long.	Lat.			
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	H. M.
♿ MERCURY. Sup. ♂ 28 ^d . 15 ^h .							
1	8. 11. 17	2. 59 S	9. 23. 12	1. 5 S	22. 32 S	19. 41	22. 47
4	8. 19. 31	3. 52	9. 27. 42	1. 23	22. 0	20. 0	22. 54
7	8. 27. 50	4. 40	10. 2. 19	1. 37	21. 15	20. 20	23. 2
10	9. 6. 18	5. 23	10. 7. 41	1. 49	20. 18	20. 40	23. 10
13	9. 15. 26	0	10. 11. 56	1. 58	19. 8	21. 0	23. 18
16	9. 24. 9	6. 29	10. 16. 56	2. 4	17. 45	21. 20	23. 27
19	10. 3. 45	6. 50	10. 22. 42	2. 7	16. 10	21. 41	23. 36
22	10. 13. 59	7. 0	10. 27. 20	2. 6	14. 22	22. 1	23. 45
25	10. 24. 56	6. 55	11. 2. 45	2. 0	12. 22	22. 22	23. 54
28	11. 6. 51	6. 33	11. 8. 19	1. 50	10. 9	22. 43	0. 1
29	11. 11. 4	6. 21	11. 10. 12	1. 45	9. 22	22. 50	0. 4
♀ VENUS.							
1	0. 17. 59	2. 51 S	11. 9. 6	1. 26 S	9. 30 S	22. 45	1. 49
7	0. 27. 34	2. 30	11. 16. 30	1. 17	6. 31	23. 12	1. 52
13	1. 7. 9	2. 5	11. 23. 53	1. 6	3. 26	23. 39	1. 55
19	1. 16. 46	1. 37	0. 1. 14	0. 52	0. 18 S	0. 6	1. 58
25	1. 26. 25	1. 5	0. 8. 34	0. 36	2. 51 N	0. 32	2. 2
♂ MARS.							
1	4. 2. 50	1. 47 N	3. 20. 9	4. 17 N	26. 11 N	7. 30	10. 31
7	4. 5. 31	1. 48	3. 18. 33	4. 10	26. 18	7. 23	10. 0
13	4. 8. 11	1. 49	3. 17. 24	4. 1	26. 19	7. 18	9. 32
19	4. 10. 51	1. 50	3. 16. 44	3. 51	26. 14	7. 15	9. 6
25	4. 13. 30	1. 51	3. 16. 33	3. 40	26. 5	7. 14	8. 42
♃ JUPITER. ♂ 18 ^d . 23 ^h 1/2.							
1	10. 28. 11	1. 0 S	10. 25. 29	0. 51 S	13. 50 S	21. 52	0. 56
7	10. 28. 43	1. 1	10. 26. 55	0. 51	13. 21	21. 58	0. 37
13	10. 29. 15	1. 1	10. 28. 21	0. 51	12. 52	22. 3	0. 19
19	10. 29. 48	1. 1	10. 29. 48	0. 51	12. 22	22. 9	0. 1
25	11. 0. 20	1. 2	11. 1. 15	0. 52	11. 51	22. 14	23. 41
♄ SATURN.							
1	0. 1. 48	2. 21 S	11. 27. 31	2. 11 S	3. 0 S	23. 54	2. 58
7	0. 2. 0	2. 21	11. 28. 8	2. 11	2. 45	23. 57	2. 36
13	0. 2. 12	2. 21	11. 28. 47	2. 10	2. 29	23. 59	2. 14
19	0. 2. 24	2. 21	11. 29. 27	2. 9	2. 12	0. 1	1. 53
25	0. 2. 37	2. 21	0. 0. 9	2. 9	1. 55	0. 4	1. 33
♅ GEORGIAN.							
1	8. 25. 13	0. 10 S	8. 27. 16	0. 10 S	23. 36 S	17. 48	20. 48
11	8. 25. 20	0. 10	8. 27. 42	0. 10	23. 36	17. 50	20. 10
21	8. 25. 26	0. 10	8. 28. 50	0. 10	23. 37	17. 52	19. 33

Days of the Week.	Days of the Month.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Tu.	1	5. 6. 5. 30	5. 11. 59. 53	2. 18. 39 N	1. 49. 39 N
W.	2	5. 17. 54. 38	5. 23. 50. 8	1. 19. 23	0. 48. 10 N
Th.	3	5. 29. 46. 48	6. 5. 45. 6	0. 16. 16 N	0. 15. 59 S
F.	4	6. 11. 45. 31	6. 17. 48. 37	0. 48. 17 S	1. 20. 19
Sa.	5	6. 23. 54. 57	7. 0. 5. 7	1. 51. 44	2. 22. 11
Sun.	6	7. 6. 19. 43	7. 12. 39. 20	2. 51. 20	3. 18. 46
M.	7	7. 19. 4. 33	7. 25. 35. 53	3. 44. 8	4. 6. 59
Tu.	8	8. 2. 13. 48	8. 8. 58. 42	4. 26. 56	4. 43. 33
W.	9	8. 15. 50. 50	8. 22. 50. 18	4. 56. 25	5. 5. 8
Th.	10	8. 29. 57. 2	9. 7. 10. 47	5. 9. 21	5. 8. 46
F.	11	9. 14. 31. 5	9. 21. 57. 15	5. 3. 8	4. 52. 21
Sa.	12	9. 29. 28. 22	10. 7. 3. 19	4. 36. 25	4. 15. 31
Sun.	13	10. 14. 40. 53	10. 22. 19. 43	3. 49. 58	3. 20. 8
M.	14	10. 29. 58. 25	11. 7. 35. 41	2. 46. 43	2. 10. 22
Tu.	15	11. 15. 10. 11	11. 22. 40. 46	1. 31. 53	0. 52. 5 S
W.	16	0. 0. 6. 29	0. 7. 26. 34	0. 11. 46 S	0. 28. 16 N
Th.	17	0. 14. 40. 27	0. 21. 47. 44	1. 7. 19 N	1. 44. 44
F.	18	0. 28. 48. 14	1. 5. 41. 57	2. 19. 59	2. 52. 38
Sa.	19	1. 12. 28. 59	1. 19. 9. 35	3. 22. 18	3. 48. 43
Sun.	20	1. 25. 44. 4	2. 2. 12. 50	4. 11. 42	4. 31. 6
M.	21	2. 8. 36. 21	2. 14. 55. 4	4. 46. 50	4. 58. 54
Tu.	22	2. 21. 9. 29	2. 27. 20. 4	5. 7. 16	5. 11. 57
W.	23	3. 3. 27. 19	3. 9. 31. 39	5. 13. 1	5. 10. 34
Th.	24	3. 15. 33. 32	3. 21. 33. 22	5. 4. 41	4. 55. 29
F.	25	3. 27. 31. 32	4. 3. 28. 22	4. 43. 6	4. 27. 42
Sa.	26	4. 9. 24. 12	4. 15. 19. 22	4. 9. 27	3. 48. 31
Sun.	27	4. 21. 14. 7	4. 27. 8. 42	3. 25. 9	2. 59. 34
M.	28	5. 3. 3. 23	5. 8. 58. 25	2. 32. 1	2. 2. 47
Tu.	29	5. 14. 54. 2	5. 20. 50. 29	1. 32. 8	1. 0. 23

		THE MOON'S							
Days of the Week.	Days of the Month.			Right Ascension.		Declination.			
		Age.	Passage Merid.	Noon.	Midn.	Noon.	Midnight.		
				D. M.	D. M.	D. M.	D. M.		
Tu.	1	18	14. 1	158. 45	164. 7	11. 27 N	8. 46 N		
W.	2	19	14. 40	169. 24	174. 39	6. 0	3. 11 N		
Th.	3	20	15. 20	179. 54	185. 10	0. 20 N	2. 32 S		
F.	4	21	16. 0	190. 29	195. 54	5. 24 S	8. 14		
Sa.	5	22	16. 42	201. 26	207. 8	11. 1	13, 44		
Sun.	6	23	17. 29	213. 1	219. 8	16. 20	18. 48		
M.	7	24	18. 20	225. 31	232. 11	21. 6	23. 10		
Tu.	8	25	19. 17	239. 10	246. 27	24. 58	26. 29		
W.	9	26	20. 18	254. 2	261. 53	27. 38	28. 21		
Th.	10	27	21. 22	269. 57	278. 8	28. 37	28. 25		
F.	11	28	22. 26	286. 23	294. 36	27. 42	26. 29		
Sa.	12	29	23. 27	302. 42	310. 38	24. 47	22. 39		
Sun.	13	1	♂	318. 21	325. 50	20. 7	17. 14		
M.	14	2	0. 25	333. 5	340. 6	14. 5	10. 45		
Tu.	15	3	1. 19	346. 56	353. 37	7. 17	3. 43 S		
W.	16	4	2. 9	0. 11	6. 39	0. 8 S	3. 23 N		
Th.	17	5	2. 58	13. 4	19. 29	6. 49 N	10. 7		
F.	18	6	3. 47	25. 55	32. 24	13. 14	16. 9		
Sa.	19	7	4. 37	38. 57	45. 34	18. 49	21. 13		
Sun.	20	8	5. 29	52. 19	59. 8	23. 18	25. 3		
M.	21	9	6. 23	66. 2	73. 0	26. 29	27. 34		
Tu.	22	10	7. 17	80. 0	86. 59	28. 17	28. 38		
W.	23	11	8. 10	93. 55	100. 48	28. 38	28. 17		
Th.	24	12	9. 2	107. 33	114. 10	27. 36	26. 36		
F.	25	13	9. 51	120. 38	126. 55	25. 18	23. 44		
Sa.	26	14	10. 37	133. 2	138. 59	21. 55	19. 55		
Sun.	27	15	11. 20	144. 46	150. 25	17. 40	15. 17		
M.	28	16	12. 2	155. 56	161. 22	12. 46	10. 7		
Tu.	29	17	12. 42	166. 42	171. 59	7. 23	4. 34		

Days of the Week.	Days of the Month.	THE MOON'S					
		Semidiameter.		Hor. Parallax.		Proportional Logarithm.	
		Noon.	Midn.	Noon.	Midn.		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
Tu.	1	14. 44	14. 45	53. 58	54. 1	5231	5227
W.	2	14. 46	14. 48	54. 6	54. 13	5221	5211
Th.	3	14. 50	14. 53	54. 22	54. 32	5199	5186
F.	4	14. 56	15. 0	54. 44	54. 59	5170	5150
Sa.	5	15. 5	15. 10	55. 15	55. 34	5129	5105
Sun.	6	15. 16	15. 22	55. 55	56. 18	5077	5048
M.	7	15. 29	15. 36	56. 43	57. 9	5016	4983
Tu.	8	15. 42	15. 51	57. 37	58. 5	4947	4912
W.	9	15. 59	16. 7	58. 33	59. 2	4877	4842
Th.	10	16. 14	16. 21	59. 30	59. 56	4808	4776
F.	11	16. 28	16. 34	60. 20	60. 41	4747	4722
Sa.	12	16. 39	16. 41	60. 59	61. 12	4701	4685
Sun.	13	16. 45	16. 46	61. 20	61. 25	4675	4670
M.	14	16. 45	16. 43	61. 24	61. 17	4671	4679
Tu.	15	16. 40	16. 37	61. 6	60. 51	4692	4710
W.	16	16. 31	16. 25	60. 32	60. 9	4733	4760
Th.	17	16. 18	16. 10	59. 43	59. 16	4792	4825
F.	18	16. 3	15. 55	58. 48	58. 19	4859	4895
Sa.	19	15. 47	15. 40	57. 51	57. 23	4930	4965
Sun.	20	15. 32	15. 25	56. 56	56. 30	4999	5032
M.	21	15. 19	15. 13	56. 6	55. 44	5063	5092
Tu.	22	15. 7	15. 3	55. 25	55. 7	5116	5140
W.	23	14. 58	14. 55	54. 51	54. 38	5161	5178
Th.	24	14. 52	14. 49	54. 27	54. 17	5193	5206
F.	25	14. 47	14. 45	54. 9	54. 3	5217	5225
Sa.	26	14. 44	14. 43	53. 59	53. 57	5230	5233
Sun.	27	14. 43	14. 43	53. 56	53. 56	5234	5234
M.	28	14. 44	14. 45	53. 58	54. 1	5231	5227
Tu.	29	14. 46	14. 47	54. 5	54. 10	5222	5215

DISTANCES of MOON'S Centre from SUN, and from STARS EAST of her.																	
Stars' Names.	Days.	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	
Antares.	1	91. 20. 4	89. 51. 16	88. 23. 27	86. 53. 36	85. 24. 44	83. 55. 49	82. 26. 52	80. 57. 52								
	2	79. 28. 49	77. 59. 43	76. 30. 33	75. 1. 19	73. 32. 1	72. 2. 39	70. 33. 11	69. 3. 37								
	3	67. 33. 57	66. 4. 11	64. 34. 19	63. 4. 19	61. 34. 12	60. 3. 57	58. 33. 34	57. 3. 2								
	4	55. 32. 21	54. 1. 30	52. 30. 29	50. 59. 17	49. 27. 55	47. 56. 21	46. 24. 34	44. 52. 35								
	5	43. 20. 23	41. 47. 57	40. 15. 17	38. 42. 23	37. 9. 14	35. 35. 49	34. 2. 8	32. 28. 9								
	6	30. 53. 53	29. 19. 20	27. 44. 29	26. 9. 19	24. 33. 49	22. 58. 0	21. 21. 51	19. 45. 21								
	7	18. 8. 30	-	-	-	-	-	-	-	-							
The Sun.	4	-	-	120. 7. 65	118. 44. 35	117. 21. 4	115. 57. 21	114. 33. 25	113. 9. 16								
	5	111. 44. 54	110. 20. 17	108. 55. 26	107. 30. 20	106. 4. 59	104. 39. 22	103. 13. 28	101. 47. 17								
	6	100. 20. 50	98. 54. 5	97. 27. 1	95. 59. 38	94. 31. 56	93. 3. 54	91. 35. 31	90. 6. 48								
	7	88. 37. 44	87. 8. 18	85. 38. 29	84. 8. 18	82. 37. 44	81. 6. 47	79. 35. 26	78. 3. 41								
	8	76. 31. 32	74. 58. 58	73. 25. 59	71. 52. 34	70. 18. 43	68. 44. 26	67. 9. 44	65. 34. 36								
	9	63. 59. 1	62. 22. 59	60. 46. 31	59. 9. 37	57. 32. 17	55. 54. 30	54. 16. 17	52. 37. 39								
	10	50. 58. 35	49. 19. 5	47. 39. 10	45. 58. 50	44. 18. 8	42. 37. 1	40. 55. 31	39. 13. 39								
	16	67. 15. 23	65. 26. 31	63. 38. 0	61. 49. 55	60. 2. 17	58. 15. 8	56. 28. 28	54. 42. 18								
	17	52. 56. 39	51. 11. 33	49. 27. 1	47. 43. 4	45. 59. 43	44. 17. 0	42. 34. 56	40. 53. 32								
	18	39. 12. 46	37. 32. 45	35. 53. 32	34. 15. 10	32. 37. 42	31. 1. 11	29. 25. 40	27. 51. 12								
Aldebaran.	19	26. 17. 52	-	-	-	-	-	-	-								
	19	68. 1. 35	66. 20. 50	64. 40. 30	63. 0. 36	61. 21. 7	59. 42. 2	58. 3. 21	56. 25. 4								
	20	54. 47. 10	53. 9. 39	51. 32. 30	49. 55. 44	48. 19. 20	46. 43. 16	45. 7. 33	43. 32. 10								
	21	41. 57. 7	40. 22. 23	38. 47. 57	37. 13. 49	35. 40. 0	34. 6. 28	32. 33. 13	31. 0. 14								
	22	29. 27. 31	-	-	-	-	-	-	-								
Pollux.																	

[illegible]

[illegible]

[illegible]

THE SATELLITES OF JUPITER

are not visible this Month,

JUPITER BEING TOO NEAR THE SUN.

Days of the Week.	Days of the Month.	<i>Sundays, Holidays, Terms, &c.</i>	<i>Phases of the MOON.</i>	
			D. H. M.	
			☾ <i>Last Quarter</i> - - -	7. 10. 10
			● <i>New Moon</i> - - - -	14. 1. 21
			☽ <i>First Quarter</i> - - -	21. 2. 1
			○ <i>Full Moon</i> - - - -	29. 6. 46
			<i>Other Phenomena.</i>	
W.	1	David.	D. H. M.	
Th.	2	Chad.	3. 0. 50 ☽ α ♍.	
F.	3		3. 16. 3 ☽ α ♍.	
Sa.	4		14. 14. 57 ☽ ♄.	
			14. - - ☉ eclipsed, invisible.	
Sun.	5	3d Sunday in Lent.	15. 1. 43 ☽ ♄.	
M.	6		16. 18. 11 ☽ ♄.	
Tu.	7	Perpetua.	20. 4. 18 ☉ enters ♈.	
W.	8		20. 5. 20 ☽ β ♋.	
Th.	9		22. 17. 0 ☽ Pollux.	
F.	10		25. 18. 59 ☽ α ♏.	
Sa.	11		29. - - ☽ eclipsed, partly vis.	
			30. 6. 58 ☽ α ♍.	
Sun.	12	4th Sun. in L. Midl.Sun.		
M.	13	[Gregory, Martyr.		
Tu.	14			
W.	15			
Th.	16			
F.	17			
Sa.	18	Edw. K. of West Sax.		
Sun.	19	5th Sunday in Lent.		
M.	20			
Tu.	21	Benedict.		
W.	22			
Th.	23			
F.	24	Camb.Term ends. [Mary.		
Sa.	25	Oxf.T.ends. Annon.B.V.		
Sun.	26	6th S. in Lent. Palm Sun.		
M.	27			
Tu.	28			
W.	29			
Th.	30			
F.	31	Good Friday.		

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Add to app. Time.</i>	Diff.
		Longitude.	Rt. Ascen. <i>in Time.</i>	Declin. <i>South.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
W.	1	11. 10. 52. 39	22. 49. 25, 6	7. 29. 44	12. 36, 2	
Th.	2	11. 11. 52. 44	22. 53. 9, 7	7. 6. 52	12. 23, 7	12, 5
F.	3	11. 12. 52. 47	22. 56. 53, 3	6. 43. 55	12. 10, 8	12, 9
Sa.	4	11. 13. 52. 49	23. 0. 36, 5	6. 20. 52	11. 57, 5	13, 3
Sun.	5	11. 14. 52. 49	23. 4. 19, 2	5. 57. 43	11. 43, 7	13, 8
						14, 2
M.	6	11. 15. 52. 48	23. 8. 1, 5	5. 34. 29	11. 29, 5	
Tu.	7	11. 16. 52. 45	23. 11. 43, 4	5. 11. 11	11. 14, 9	14, 6
W.	8	11. 17. 52. 40	23. 15. 25, 0	4. 47. 49	10. 59, 9	15, 0
Th.	9	11. 18. 52. 33	23. 19. 6, 2	4. 24. 23	10. 44, 6	15, 3
F.	10	11. 19. 52. 25	23. 22. 47, 0	4. 0. 53	10. 28, 9	15, 7
						15, 9
Sa.	11	11. 20. 52. 16	23. 26. 27, 6	3. 37. 20	10. 13, 0	
Sun.	12	11. 21. 52. 5	23. 30. 7, 8	3. 13. 45	9. 56, 7	16, 3
M.	13	11. 22. 51. 51	23. 33. 47, 8	2. 50. 7	9. 40, 2	16, 5
Tu.	14	11. 23. 51. 36	23. 37. 27, 5	2. 26. 28	9. 23, 3	16, 9
W.	15	11. 24. 51. 19	23. 41. 6, 9	2. 2. 47	9. 6, 3	17, 0
						17, 3
Th.	16	11. 25. 51. 0	23. 44. 46, 1	1. 39. 5	8. 49, 0	
F.	17	11. 26. 50. 39	23. 48. 25, 1	1. 15. 22	8. 31, 5	17, 5
Sa.	18	11. 27. 50. 15	23. 52. 3, 9	0. 51. 39	8. 13, 8	17, 7
Sun.	19	11. 28. 49. 49	23. 55. 42, 5	0. 27. 57	7. 55, 8	18, 0
M.	20	11. 29. 49. 21	23. 59. 20, 9	0. 4. 14 <i>North.</i>	7. 37, 8	18, 0
						18, 3
Tu.	21	0. 0. 48. 51	0. 2. 59, 2	0. 19. 27	7. 19, 5	
W.	22	0. 1. 48. 18	0. 6. 37, 4	0. 43. 7	7. 1, 2	18, 3
Th.	23	0. 2. 47. 42	0. 10. 15, 4	1. 6. 45	6. 42, 7	18, 5
F.	24	0. 3. 47. 4	0. 13. 53, 4	1. 30. 22	6. 24, 2	18, 5
Sa.	25	0. 4. 46. 24	0. 17. 31, 3	1. 53. 56	6. 5, 6	18, 6
						18, 7
Sun.	26	0. 5. 45. 42	0. 21. 9, 1	2. 17. 28	5. 46, 9	
M.	27	0. 6. 44. 58	0. 24. 47, 0	2. 40. 57	5. 28, 3	18, 6
Tu.	28	0. 7. 44. 11	0. 28. 24, 8	3. 4. 22	5. 9, 6	18, 7
W.	29	0. 8. 43. 23	0. 32. 2, 7	3. 27. 44	4. 51, 0	18, 6
Th.	30	0. 9. 42. 32	0. 35. 40, 6	3. 51. 2	4. 32, 4	18, 6
						18, 5
F.	31	0. 10. 41. 39	0. 39. 18, 6	4. 14. 16	4. 13, 9	

Days	Time of ☉'s Semidiam. pass ^g . Merid.	THE SUN'S			Place of the D's Node.
	M. S.	Semi- diameter.	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 5, 2	16. 9, 5	2. 30, 3	9. 99626	0. 3. 15
7	1. 4, 8	16. 7, 9	2. 29, 8	9. 99694	0. 2. 56
13	1. 4, 5	16. 6, 4	2. 29, 4	9. 99765	0. 2. 37
19	1. 4, 3	16. 4, 7	2. 28, 9	9. 99839	0. 2. 18
25	1. 4, 2	16. 3, 1	2. 28, 4	9. 99913	0. 1. 59

ECLIPSES OF THE SATELLITES OF JUPITER.
MEAN TIME.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
23	5. 29. 20	24	20. 10. 30	22	18. 15. 12 Im.
24	23. 57. 50	28	9. 29. 51	22	21. 41. 35 E.
26	18. 26. 21	31	22. 48. 5	29	22. 15. 53 Im.
28	12. 54. 50			30	1. 41. 44 E.
30	7. 23. 22				
				IV. Satellite.	
				25	11. 57. 55 Im.
				25	16. 31. 39 E.

THE PLANETS'								
Days	Heliocentric		Geocentric		Declin.	Rt. Asc.	Passage	
	Long.	Lat.	Long.	Lat.		in Time.	Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	H. M.	
♿ MERCURY. Gr. Elong. 25 ^d .								
1	11. 15. 24	6. 7 S	11. 12. 6	1. 40 S	8. 34 S	22. 57	0. 7	
4	11. 29. 13	5. 8	11. 17. 52	1. 21	6. 3	23. 17	0. 17	
7	0. 14. 22	3. 42	11. 23. 44	0. 57	3. 22	23. 38	0. 27	
10	1. 0. 53	1. 51 S	11. 29. 35	0. 28 S	0. 36 S	23. 59	0. 37	
13	1. 18. 36	0. 18 N	0. 5. 19	0. 5 N	2. 11 N	0. 19	0. 46	
16	2. 7. 13	2. 31	0. 10. 46	0. 41	4. 54	0. 38	0. 54	
19	2. 26. 9	4. 30	0. 15. 45	1. 18	7. 25	0. 56	1. 0	
22	3. 14. 45	5. 59	0. 20. 2	1. 55	9. 37	1. 11	1. 4	
25	4. 2. 25	6. 48	0. 23. 27	2. 28	11. 24	1. 23	1. 5	
28	4. 18. 48	7. 0	0. 25. 53	2. 54	12. 42	1. 32	1. 3	
31	5. 3. 45	6. 41	0. 27. 15	3. 10	13. 28	1. 36	0. 57	
♀ VENUS.								
1	2. 4. 26	0. 37 S	0. 14. 38	0. 21 S	5. 27 N	0. 54	2. 5	
7	2. 14. 6	0. 3 S	0. 21. 53	0. 2 S	8. 30	1. 21	2. 9	
13	2. 23. 47	0. 31 N	0. 29. 5	0. 18 N	11. 27	1. 48	2. 14	
19	3. 3. 29	1. 4	1. 6. 13	0. 39	14. 14	2. 15	2. 19	
25	3. 13. 12	1. 36	1. 13. 18	1. 0	16. 49	2. 43	2. 25	
♂ MARS.								
1	4. 15. 43	1. 51 N	3. 16. 43	3. 31 N	25. 55 N	7. 14	8. 24	
7	4. 18. 21	1. 51	3. 17. 18	3. 20	25. 39	7. 17	8. 4	
13	4. 20. 59	1. 51	3. 18. 15	3. 9	25. 21	7. 21	7. 46	
19	4. 23. 37	1. 50	3. 19. 32	2. 59	25. 0	7. 26	7. 30	
25	4. 26. 14	1. 50	3. 21. 7	2. 49	24. 35	7. 33	7. 15	
♃ JUPITER.								
1	11. 0. 47	1. 2 S	11. 2. 28	0. 52 S	11. 25 S	22. 19	23. 27	
7	11. 1. 19	1. 3	11. 3. 53	0. 53	10. 55	22. 24	23. 10	
13	11. 1. 51	1. 3	11. 5. 18	0. 53	10. 24	22. 30	22. 53	
19	11. 2. 24	1. 4	11. 6. 43	0. 54	9. 53	22. 35	22. 37	
25	11. 2. 56	1. 4	11. 8. 5	0. 55	9. 24	22. 40	22. 20	
♄ SATURN. ♄ 23 ^d . 17 ^h ½.								
1	0. 2. 49	2. 21 S	0. 0. 43	2. 9 S	1. 41 S	0. 6	1. 16	
7	0. 3. 0	2. 22	0. 1. 28	2. 9	1. 23	0. 9	0. 57	
13	0. 3. 11	2. 22	0. 2. 13	2. 8	1. 5	0. 11	0. 38	
19	0. 3. 23	2. 22	0. 2. 57	2. 8	0. 47	0. 14	0. 18	
25	0. 3. 35	2. 22	0. 3. 41	2. 8	0. 30	0. 17	23. 57	
♅ GEORGIAN. ☐ 18 ^d . 21 ^h ½.								
1	8. 25. 33	0. 10 S	8. 28. 22	0. 10 S	23. 37 S	17. 53	19. 1	
11	8. 25. 40	0. 10	8. 28. 36	0. 10	23. 38	17. 54	18. 25	
21	8. 25. 47	0. 10	8. 28. 45	0. 10	23. 38	17. 55	17. 49	

Days of the Week.	Days of the Month.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
W.	1	5. 26. 48. 1	6. 2. 46. 53	0. 27. 51 N	0. 5. 8 S
Th.	2	6. 8. 47. 22	6. 14. 49. 47	0. 38. 13 S	1. 11. 5
F.	3	6. 20. 54. 27	6. 27. 1. 43	1. 43. 22	2. 14. 42
Sa.	4	7. 3. 11. 57	7. 9. 25. 33	2. 44. 44	3. 13. 6
Sun.	5	7. 15. 42. 53	7. 22. 4. 23	3. 39. 25	4. 3. 20
M.	6	7. 28. 30. 26	8. 5. 1. 26	4. 24. 29	4. 42. 31
Tu.	7	8. 11. 37. 45	8. 18. 19. 41	4. 57. 5	5. 7. 50
W.	8	8. 25. 7. 29	9. 2. 1. 17	5. 14. 27	5. 16. 41
Th.	9	9. 9. 1. 10	9. 16. 7. 5	5. 14. 17	5. 7. 5
F.	10	9. 23. 18. 48	10. 0. 35. 57	4. 55. 0	4. 38. 2
Sa.	11	10. 7. 58. 0	10. 15. 24. 13	4. 16. 18	3. 50. 4
Sun.	12	10. 22. 53. 46	11. 0. 25. 41	3. 19. 41	2. 45. 41
M.	13	11. 7. 58. 52	11. 15. 32. 9	2. 8. 40	1. 29. 21
Tu.	14	11. 23. 4. 24	0. 0. 34. 27	0. 48. 32 S	0. 7. 5 S
W.	15	0. 8. 1. 13	0. 15. 23. 46	0. 34. 12 N	1. 14. 83 N
Th.	16	0. 22. 41. 16	0. 29. 53. 3	1. 53. 13	2. 29. 83
F.	17	1. 6. 58. 37	1. 13. 57. 39	3. 3. 2	3. 33. 16
Sa.	18	1. 20. 49. 59	1. 27. 35. 37	3. 59. 54	4. 22. 44
Sun.	19	2. 4. 14. 39	2. 10. 47. 21	4. 41. 38	4. 56. 31
M.	20	2. 17. 14. 3	2. 23. 35. 9	5. 7. 24	5. 14. 22
Tu.	21	2. 29. 51. 9	3. 6. 2. 34	5. 17. 29	5. 16. 50
W.	22	3. 12. 9. 55	3. 18. 13. 46	5. 12. 35	5. 4. 53
Th.	23	3. 24. 14. 41	4. 0. 13. 12	4. 53. 53	4. 39. 45
F.	24	4. 6. 9. 52	4. 12. 5. 14	4. 22. 41	4. 2. 53
Sa.	25	4. 17. 59. 44	4. 23. 53. 49	3. 40. 32	3. 15. 51
Sun.	26	4. 29. 47. 58	5. 5. 42. 37	2. 49. 4	2. 20. 27
M.	27	5. 11. 38. 6	5. 17. 34. 46	1. 50. 15	1. 18. 45
Tu.	28	5. 23. 32. 56	5. 29. 32. 53	0. 46. 15 N	0. 13. 6 N
W.	29	6. 5. 34. 51	6. 11. 39. 4	0. 20. 23 S	0. 53. 50 S
Th.	30	6. 17. 45. 46	6. 23. 55. 8	1. 26. 53	1. 59. 8
F.	31	7. 0. 7. 18	7. 6. 22. 26	2. 30. 13	2. 59. 45

Days of the Week.	Days of the Month.	THE MOON'S					
		Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	Midnight	Noon.	Midnight.
				D. M.	D. M.	D. M.	D. M.
W.	1	18	13. 21	177. 15	182. 31	1. 42 N	1. 11 S
Th.	2	19	14. 0	187. 49	193. 11	4. 5 S	6. 57
F.	3	20	14. 43	198. 39	204. 15	9. 46	12. 31
Sa.	4	21	15. 28	210. 0	215. 57	15. 10	17. 41
Sun.	5	22	16. 16	222. 7	228. 31	20. 3	22. 13
M.	6	23	17. 10	235. 11	242. 8	24. 8	25. 47
Tu.	7	24	18. 8	249. 21	256. 48	27. 7	28. 4
W.	8	25	19. 10	264. 28	272. 18	28. 36	28. 43
Th.	9	26	20. 12	280. 14	288. 11	28. 23	27. 34
F.	10	27	21. 13	296. 6	303. 55	26. 17	24. 33
Sa.	11	28	22. 11	311. 35	319. 4	22. 25	19. 54
Sun.	12	29	23. 6	326. 22	333. 30	17. 3	13. 55
M.	13	30	23. 57	340. 28	347. 16	10. 35	7. 5 S
Tu.	14	1	♂	353. 57	0. 34	3. 30 S	0. 7 N
W.	15	2	0. 48	7. 8	13. 41	3. 42 N	7. 13
Th.	16	3	1. 39	20. 16	26. 54	10. 35	13. 46
F.	17	4	2. 31	33. 36	40. 22	16. 44	19. 26
Sa.	18	5	3. 24	47. 15	54. 14	21. 50	23. 54
Sun.	19	6	4. 19	61. 18	68. 25	25. 38	26. 59
M.	20	7	5. 15	75. 34	82. 43	27. 57	28. 32
Tu.	21	8	6. 11	89. 50	96. 51	28. 45	28. 36
W.	22	9	7. 4	103. 45	110. 31	28. 6	27. 15
Th.	23	10	7. 55	117. 7	123. 31	26. 6	24. 41
F.	24	11	8. 42	129. 44	135. 46	23. 0	21. 5
Sa.	25	12	9. 26	141. 38	147. 21	18. 58	16. 39
Sun.	26	13	10. 7	152. 55	158. 24	14. 11	11. 36
M.	27	14	10. 48	163. 47	169. 6	8. 54	6. 7
Tu.	28	15	11. 28	174. 23	179. 40	3. 16 N	0. 23 N
W.	29	16	12. 8	184. 59	190. 21	2. 31 S	5. 26 S
Th.	30	17	12. 49	195. 49	201. 23	8. 19	11. 8
F.	31	18	13. 34	207. 6	213. 1	13. 52	16. 29

Days of the Week.	Days of the Month.	THE MOON's				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight	Noon.	Midnight		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
W.	1	14. 49	14. 51	54. 17	54. 25	5206	5195
Th.	2	14. 54	14. 57	54. 34	54. 45	5183	5169
F.	3	15. 0	15. 3	54. 57	55. 10	5153	5136
Sa.	4	15. 7	15. 12	55. 25	55. 41	5116	5095
Sun.	5	15. 17	15. 22	55. 59	56. 18	5072	5048
M.	6	15. 28	15. 34	56. 39	57. 1	5021	4993
Tu.	7	15. 40	15. 46	57. 24	57. 48	4964	4933
W.	8	15. 53	16. 0	58. 13	58. 38	4902	4871
Th.	9	16. 7	16. 13	59. 2	59. 26	4842	4812
F.	10	16. 20	16. 25	59. 49	60. 10	4784	4759
Sa.	11	16. 30	16. 35	60. 28	60. 44	4738	4718
Sun.	12	16. 38	16. 40	60. 56	61. 4	4704	4695
M.	13	16. 41	16. 41	61. 8	61. 7	4690	4691
Tu.	14	16. 39	16. 36	61. 1	60. 51	4698	4710
W.	15	16. 32	16. 27	60. 36	60. 17	4728	4751
Th.	16	16. 21	16. 14	59. 55	59. 30	4777	4808
F.	17	16. 7	15. 59	59. 3	58. 35	4841	4875
Sa.	18	15. 52	15. 44	58. 7	57. 38	4910	4946
Sun.	19	15. 36	15. 29	57. 10	56. 43	4981	5016
M.	20	15. 22	15. 15	56. 17	55. 53	5049	5080
Tu.	21	15. 9	15. 4	55. 31	55. 12	5108	5133
W.	22	14. 59	14. 55	54. 55	54. 41	5156	5174
Th.	23	14. 52	14. 49	54. 29	54. 19	5190	5203
F.	24	14. 48	14. 46	54. 12	54. 6	5213	5221
Sa.	25	14. 45	14. 45	54. 2	54. 1	5226	5227
Sun.	26	14. 45	14. 45	54. 2	54. 4	5226	5223
M.	27	14. 46	14. 48	54. 8	54. 14	5218	5210
Tu.	28	14. 50	14. 52	54. 22	54. 30	5199	5189
W.	29	14. 55	14. 58	54. 39	54. 49	5177	5164
Th.	30	15. 1	15. 4	55. 0	55. 12	5149	5133
F.	31	15. 7	15. 11	55. 25	55. 38	5116	5099

Stars' Names.	Days	Noon.		III ^b .		VI ^b .		IX ^b .		Midnight.		XV ^b .		XVIII ^b .		XXI ^b .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Pollux.	16	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	80. 37. 45	80. 37. 45	78. 50. 34	77. 3. 49	77. 3. 49	77. 3. 49	75. 17. 29	75. 17. 29
	17	73. 31. 34	71. 46. 6	71. 46. 6	70. 1. 4	68. 16. 29	68. 16. 29	68. 16. 29	68. 16. 29	66. 32. 20	66. 32. 20	64. 48. 38	63. 5. 24	63. 5. 24	61. 22. 36	61. 22. 36	61. 22. 36
	18	59. 40. 15	57. 58. 21	57. 58. 21	56. 16. 64	54. 35. 53	54. 35. 53	54. 35. 53	54. 35. 53	52. 55. 19	52. 55. 19	51. 15. 11	49. 35. 29	49. 35. 29	47. 56. 13	47. 56. 13	47. 56. 13
	19	46. 17. 22	44. 38. 57	44. 38. 57	43. 0. 56	41. 23. 20	41. 23. 20	41. 23. 20	41. 23. 20	39. 46. 8	39. 46. 8	38. 9. 20	36. 32. 55	36. 32. 55	34. 56. 53	34. 56. 53	34. 56. 53
	20	33. 21. 14	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Regulus.	20	70. 8. 21	68. 33. 2	68. 33. 2	66. 58. 4	65. 23. 27	65. 23. 27	65. 23. 27	65. 23. 27	63. 49. 11	63. 49. 11	62. 15. 14	60. 41. 36	60. 41. 36	59. 8. 16	59. 8. 16	59. 8. 16
	21	57. 35. 15	56. 2. 31	56. 2. 31	54. 30. 4	52. 57. 53	52. 57. 53	52. 57. 53	52. 57. 53	51. 25. 58	51. 25. 58	49. 54. 19	48. 22. 54	48. 22. 54	46. 51. 43	46. 51. 43	46. 51. 43
	22	45. 20. 46	43. 50. 3	43. 50. 3	42. 19. 32	40. 49. 13	40. 49. 13	40. 49. 13	40. 49. 13	39. 19. 6	39. 19. 6	37. 49. 10	36. 19. 25	36. 19. 25	34. 49. 50	34. 49. 50	34. 49. 50
	23	33. 20. 24	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
	23	87. 16. 45	85. 47. 12	85. 47. 12	84. 17. 46	82. 48. 26	82. 48. 26	82. 48. 26	82. 48. 26	81. 19. 13	81. 19. 13	79. 50. 6	78. 21. 4	78. 21. 4	76. 52. 7	76. 52. 7	76. 52. 7
Spica ♀.	24	75. 23. 15	73. 54. 26	73. 54. 26	72. 25. 41	70. 56. 58	70. 56. 58	70. 56. 58	70. 56. 58	69. 28. 18	69. 28. 18	67. 59. 40	66. 31. 4	66. 31. 4	65. 2. 29	65. 2. 29	65. 2. 29
	25	63. 33. 54	62. 5. 20	62. 5. 20	60. 36. 47	59. 8. 13	59. 8. 13	59. 8. 13	59. 8. 13	57. 39. 37	57. 39. 37	56. 11. 0	54. 42. 21	54. 42. 21	53. 13. 40	53. 13. 40	53. 13. 40
	26	51. 44. 57	50. 16. 11	50. 16. 11	48. 47. 21	47. 18. 28	47. 18. 28	47. 18. 28	47. 18. 28	45. 49. 31	45. 49. 31	44. 20. 31	42. 51. 26	42. 51. 26	41. 22. 15	41. 22. 15	41. 22. 15
	27	39. 53. 0	38. 23. 40	38. 23. 40	36. 54. 14	35. 24. 42	35. 24. 42	35. 24. 42	35. 24. 42	33. 55. 5	33. 55. 5	- - -	- - -	- - -	- - -	- - -	- - -
	27	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	79. 48. 58	79. 48. 58	78. 19. 16	76. 49. 24	76. 49. 24	75. 19. 27	75. 19. 27	75. 19. 27
Antares.	28	73. 49. 24	72. 19. 14	72. 19. 14	70. 48. 56	69. 18. 30	69. 18. 30	69. 18. 30	69. 18. 30	67. 47. 57	67. 47. 57	66. 17. 16	64. 46. 27	64. 46. 27	63. 15. 31	63. 15. 31	63. 15. 31
	29	61. 44. 26	60. 13. 13	60. 13. 13	58. 41. 52	57. 10. 22	57. 10. 22	57. 10. 22	57. 10. 22	55. 38. 43	55. 38. 43	54. 6. 55	52. 34. 58	52. 34. 58	51. 2. 52	51. 2. 52	51. 2. 52
	30	49. 30. 37	47. 58. 12	47. 58. 12	46. 25. 38	44. 52. 54	44. 52. 54	44. 52. 54	44. 52. 54	43. 20. 1	43. 20. 1	41. 46. 58	40. 13. 46	40. 13. 46	38. 40. 24	38. 40. 24	38. 40. 24
	31	37. 6. 52	35. 33. 9	35. 33. 9	33. 59. 16	32. 25. 13	32. 25. 13	32. 25. 13	32. 25. 13	30. 51. 0	30. 51. 0	29. 16. 36	27. 42. 2	27. 42. 2	26. 7. 17	26. 7. 17	26. 7. 17
	A. 1	24. 32. 21	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -

DISTANCES of MOON'S Centre from SUN, and from STARS <i>WEST</i> of her.														
Stars' Names.	Days	Noon.		III ^b .	VI ^b .		IX ^b .		Midnight.	XV ^b .	XVIII ^b .	XXI ^b .		
		D.	M. S.		D.	M. S.	D.	M. S.					D.	M. S.
Regulus.	1	29. 27. 55		30. 57. 32		32. 27. 16		33. 57. 7		35. 27. 5	36. 57. 10		38. 27. 23	39. 57. 43
	2	41. 28. 10		42. 58. 45		44. 29. 28		46. 0. 19		47. 31. 18	49. 2. 26		50. 33. 42	52. 5. 7
	3	53. 36. 41		55. 8. 24		56. 40. 17		58. 12. 20		59. 44. 33	61. 16. 56		62. 49. 30	64. 22. 15
	4	65. 55. 11		67. 28. 19		69. 1. 39		70. 35. 11		72. 8. 56	73. 42. 53		75. 17. 4	76. 51. 28
	5	78. 26. 6		-		-		-		-	-		-	-
Spica μ .	6	24. 24. 4		25. 59. 2		27. 34. 15		29. 9. 43		30. 45. 26	32. 21. 25		33. 57. 40	35. 34. 12
	7	37. 11. 0		38. 48. 6		40. 25. 29		42. 3. 10		43. 41. 10	45. 19. 28		46. 58. 5	48. 37. 2
	8	50. 16. 20		51. 55. 57		53. 35. 54		55. 16. 12		56. 56. 51	58. 37. 51		60. 19. 13	62. 0. 56
	9	63. 43. 1		65. 25. 29		67. 8. 19		68. 51. 31		70. 35. 5	72. 19. 2		74. 3. 23	75. 48. 6
	9	77. 33. 12		-		-		-		-	-		-	-
Antares.	9	31. 39. 21		33. 24. 50		35. 10. 42		36. 56. 57		38. 43. 34	40. 30. 33		42. 17. 55	44. 5. 40
	10	45. 53. 48		47. 42. 16		49. 31. 5		51. 20. 15		53. 9. 46	54. 59. 36		56. 49. 45	58. 40. 13
	11	60. 31. 0		62. 22. 4		64. 13. 24		66. 5. 0		67. 56. 52	-		-	-
The Sun.	17	40. 13. 44		41. 51. 50		43. 29. 29		45. 6. 41		46. 43. 27	48. 19. 48		49. 55. 38	51. 31. 3
	18	53. 6. 2		54. 40. 34		56. 14. 40		57. 48. 20		59. 21. 53	60. 54. 20		62. 26. 41	63. 58. 86
	19	65. 30. 6		67. 1. 11		68. 31. 52		70. 2. 9		71. 32. 3	73. 1. 33		74. 30. 40	75. 59. 24
	20	77. 27. 46		78. 55. 46		80. 23. 26		81. 50. 46		83. 17. 45	84. 44. 25		86. 10. 46	87. 36. 49
	21	89. 2. 32		90. 28. 2		91. 53. 13		93. 18. 8		94. 42. 47	96. 7. 11		97. 31. 21	98. 55. 18
	22	100. 49. 1		101. 42. 32		103. 5. 51		104. 26. 59		105. 51. 56	107. 14. 41		108. 37. 18	109. 59. 45
	23	111. 22. 3		112. 44. 14		114. 6. 18		115. 28. 14		116. 59. 2	118. 11. 46		119. 33. 24	120. 54. 58

CONFIGURATIONS of the SATellites of JUPITER,
at V. o'Clock in the *Morning*.

25	3°	○	2.1°	4°
26	3°	○	4°	○
27	2°	○	1 6 3	
28	4°	○	2°	3°
29	4°	1 6 2	○	2°
30	4°	○	1 6 3	
31	4°	○	2°	

Days of the Week.	Days of the Month.	<i>Sundays, Holidays, Terms, &c.</i>	<i>Phases of the MOON.</i>	
			D. H. M.	
			☾ <i>Last Quarter</i> - -	5. 19. 24
			● <i>New Moon</i> - - -	12. 11. 14
			☽ <i>First Quarter</i> - -	19. 19. 22
			○ <i>Full Moon</i> - - -	27. 21. 55
			<i>Other Phenomena.</i>	
			D. H. M.	
Sa.	1		2. 21. 47	☽ α m.
Sun.	2	<i>EASTER-DAY.</i> [Chich.	3. - -	☿ Stationary.
M.	3	<i>Easter-Mon.</i> Rich. Bp. of	10. - -	♄ Stationary.
Tu.	4	<i>Easter-Tuesd.</i> St. Ambr.	11. 7. 10	☽ η.
W.	5		12. 11. 16	☽ ξ.
Th.	6		16. 14. 23	☽ β ξ.
F.	7		19. 0. 49	☽ Pollux.
Sa.	8		19. 16. 45	☉ enters ξ.
Sun.	9	<i>1st Sun. aft. E. Low-Sun.</i>	22. 2. 20	☽ α Ω.
M.	10		26. 14. 9	☽ α η.
Tu.	11		26. - -	☿ Stationary.
W.	12	<i>Oxf. & Camb. Terms beg.</i>	30. 3. 48	☽ α m.
Th.	13			
F.	14			
Sa.	15			
Sun.	16	<i>2d Sunday after Easter.</i>		
M.	17	<i>Fr. East. in 15 days 1 ret.</i>		
Tu.	18			
W.	19	<i>East T. beg. Alphege.</i>		
Th.	20			
F.	21			
Sa.	22			
Sun.	23	<i>3d Sun. after E. St. Geo.</i>		
M.	24	<i>In 3 W. aft. East. 2 ret.</i>		
Tu.	25	<i>St. Mark. Ds. Glou. born.</i>		
W.	26			
Th.	27			
F.	28			
Sa.	29			
Sun.	30	<i>4th Sun. after Easter.</i>		

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Add to app. Time.</i>	Diff.
		Longitude.	Rt. Ascen. <i>in Time.</i>	Declin. <i>North.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Sa.	1	0. 11. 40. 44	0. 42. 56, 7	4. 37. 24	3. 55, 5	
Sun.	2	0. 12. 39. 47	0. 46. 35, 0	5. 0. 28	3. 37, 2	18, 3
M.	3	0. 13. 38. 48	0. 50. 18, 3	5. 23. 27	3. 19, 1	18, 1
Tu.	4	0. 14. 37. 48	0. 53. 51, 8	5. 46. 21	3. 1, 1	18, 0
W.	5	0. 15. 36. 46	0. 57. 30, 6	6. 9. 8	2. 43, 3	17, 8
						17, 5
Th.	6	0. 16. 35. 42	1. 1. 9, 5	6. 31. 49	2. 25, 8	
F.	7	0. 17. 34. 37	1. 4. 48, 6	6. 54. 24	2. 8, 4	17, 4
Sa.	8	0. 18. 33. 30	1. 8. 28, 0	7. 16. 52	1. 51, 3	17, 1
Sun.	9	0. 19. 32. 21	1. 12. 7, 7	7. 39. 12	1. 34, 5	16, 8
M.	10	0. 20. 31. 11	1. 15. 47, 6	8. 1. 25	1. 17, 9	16, 6
						16, 3
Tu.	11	0. 21. 29. 59	1. 19. 27, 9	8. 23. 30	1. 1, 6	
W.	12	0. 22. 28. 45	1. 23. 8, 4	8. 45. 27	0. 45, 6	16, 0
Th.	13	0. 23. 27. 29	1. 26. 49, 3	9. 7. 15	0. 30, 0	15, 6
F.	14	0. 24. 26. 11	1. 30. 30, 4	9. 28. 54	0. 14, 6	15, 4
					<i>Subt.</i>	15, 0
Sa.	15	0. 25. 24. 51	1. 34. 11, 9	9. 50. 24	0. 0, 4	
						14, 7
Sun.	16	0. 26. 23. 29	1. 37. 53, 8	10. 11. 43	0. 15, 1	
M.	17	0. 27. 22. 5	1. 41. 36, 0	10. 32. 52	0. 29, 4	14, 3
Tu.	18	0. 28. 20. 38	1. 45. 18, 6	10. 53. 51	0. 43, 4	14, 0
W.	19	0. 29. 19. 10	1. 49. 1, 5	11. 14. 39	0. 56, 9	13, 5
Th.	20	1. 0. 17. 39	1. 52. 44, 8	11. 35. 17	1. 10, 1	13, 2
						12, 7
F.	21	1. 1. 16. 6	1. 56. 28, 6	11. 55. 42	1. 22, 8	
Sa.	22	1. 2. 14. 30	2. 0. 12, 7	12. 15. 56	1. 35, 2	12, 4
Sun.	23	1. 3. 12. 53	2. 3. 57, 4	12. 35. 57	1. 47, 1	11, 9
M.	24	1. 4. 11. 13	2. 7. 42, 4	12. 55. 46	1. 58, 6	11, 5
Tu.	25	1. 5. 9. 32	2. 11. 27, 9	13. 15. 22	2. 9, 6	11, 0
						10, 6
W.	26	1. 6. 7. 48	2. 15. 13, 9	13. 34. 45	2. 20, 2	
Th.	27	1. 7. 6. 3	2. 19. 0, 4	13. 53. 55	2. 30, 2	10, 0
F.	28	1. 8. 4. 16	2. 22. 47, 4	14. 12. 52	2. 39, 7	9, 5
Sa.	29	1. 9. 2. 27	2. 26. 34, 9	14. 31. 34	2. 48, 7	9, 0
Sun.	30.	1. 10. 0. 36	2. 30. 22, 9	14. 50. 2	2. 57, 2	8, 5

Days	Time of ☉'s Semidiam. pass ^d . Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semidia- meter. M. S.	Hourly Motion. M. S.	Logar. Distance.	S. D. M.
1	1. 4. 2	16. 1. 1	2. 27. 8	0. 00001	0. 1. 36
7	1. 4. 4	15. 59. 5	2. 27. 2	0. 00076	0. 1. 17
13	1. 4. 6	15. 57. 8	2. 26. 7	0. 00150	0. 0. 58
19	1. 4. 9	15. 56. 3	2. 26. 3	0. 00222	0. 0. 39
25	1. 5. 4	15. 54. 7	2. 25. 8	0. 00291	0. 0. 20

ECLIPSES OF THE SATELLITES OF JUPITER.
MEAN TIME.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	1. 51. 50	4	12. 7. 27	6	2. 17. 20 Im.
2	20. 20. 20	8	1. 25. 39	6	5. 42. 39 E.
4	14. 48. 48	11	14. 45. 1	13	6. 17. 42 Im.
6	9. 17. 18	15	4. 3. 15	13	9. 42. 24 E.
8	3. 45. 45	18	17. 22. 35	20	10. 17. 58 Im.
9	22. 14. 13	22	6. 40. 50	20	13. 42. 10 E.
11	16. 42. 40	25	20. 0. 11	27	14. 17. 58 Im.
13	11. 11. 8	29	9. 18. 22	27	17. 41. 32 E.
15	5. 39. 35				
17	0. 8. 8				
18	18. 30. 29				
20	13. 4. 54				
22	7. 33. 21				
24	2. 1. 46				
25	20. 30. 13				
27	14. 58. 38				
29	9. 27. 3				
				IV. Satellite.	
				11	6. 11. 13 Im.
				11	10. 41. 42 E.
				28	0. 25. 3 Im.
				28	4. 51. 52 E.

Days	THE PLANETS'						
	Heliocentric		Geocentric		Declin.	Rt. Asc.	Passage
	Long.	Lat.	Long.	Lat.		in Time.	Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	H. M.
♂ MERCURY. Inf. ♂ 12 ^d . 11 ^h $\frac{1}{2}$.							
1	5. 8. 25	6. 29 N	0. 27. 27	3. 13 N	13. 35 N	1. 37	0. 54
4	5. 21. 33	5. 43	0. 27. 25	3. 14	13. 35	1. 37	0. 43
7	6. 3. 30	4. 46	0. 26. 26	3. 1	13. 1	1. 34	0. 29
10	6. 14. 28	3. 42	0. 24. 42	2. 34	11. 58	1. 28	0. 12
13	6. 24. 38	2. 35	0. 22. 35	1. 54	10. 34	1. 21	23. 48
16	7. 4. 10	1. 28	0. 20. 26	1. 7	9. 2	1. 14	23. 30
19	7. 13. 13	0. 22 N	0. 18. 35	0. 17 N	7. 33	1. 8	23. 13
22	7. 21. 54	0. 42 S	0. 17. 16	0. 32 S	6. 18	1. 4	23. 0
25	8. 0. 20	1. 43	0. 16. 39	1. 17	5. 22	1. 3	22. 49
28	8. 8. 37	2. 41	0. 16. 46	1. 55	4. 50	1. 5	22. 40
30	8. 14. 6	3. 17	0. 17. 15	2. 16	4. 41	1. 9	22. 34
♀ VENUS.							
1	3. 24. 33	2. 10 N	1. 21. 29	1. 25 N	19. 31 N	3. 15	2. 32
7	4. 4. 18	2. 34	1. 28. 25	1. 45	21. 32	3. 43	2. 38
13	4. 14. 32	2. 55	2. 5. 16	2. 4	23. 14	4. 12	2. 45
19	4. 23. 49	3. 10	2. 12. 02	2. 21	24. 35	4. 41	2. 52
25	5. 3. 34	3. 19	2. 18. 39	2. 36	25. 34	5. 10	2. 58
♂ MARS. □ 20 ^d . 7 ^h $\frac{1}{2}$.							
1	4. 29. 18	1. 49 N	3. 23. 16	2. 38 N	24. 4 N	7. 42	6. 59
7	5. 1. 55	1. 48	3. 25. 20	2. 29	23. 33	7. 51	6. 46
13	5. 4. 32	1. 46	3. 27. 36	2. 21	22. 58	8. 0	6. 33
19	5. 7. 9	1. 45	4. 0. 2	2. 13	22. 20	8. 11	6. 21
25	5. 9. 47	1. 43	4. 2. 35	2. 7	21. 39	8. 21	6. 9
♃ JUPITER.							
1	11. 3. 34	1. 58 S	11. 9. 39	0. 56 S	8. 49 S	22. 46	22. 1
7	11. 4. 6	1. 5	11. 10. 58	0. 56	8. 20	22. 51	21. 44
13	11. 4. 38	1. 5	11. 12. 15	0. 57	7. 51	22. 56	21. 26
19	11. 5. 11	1. 6	11. 13. 29	0. 58	7. 24	23. 1	21. 9
25	11. 5. 43	1. 6	11. 14. 40	0. 59	6. 57	23. 5	20. 51
♄ SATURN.							
1	0. 3. 50	2. 22 S	0. 4. 34	2. 9 S	0. 10 S	0. 20	23. 34
7	0. 4. 22	2. 22	0. 5. 19	2. 9	0. 8 N	0. 23	23. 15
13	0. 4. 14	2. 23	0. 6. 32	2. 10	0. 25	0. 26	22. 56
19	0. 4. 26	2. 23	0. 6. 46	2. 10	0. 42	0. 28	22. 36
25	0. 4. 38	2. 23	0. 7. 29	2. 11	0. 58	0. 31	22. 16
♅ GEORGIAN.							
1	8. 25. 54	0. 10 S	8. 28. 48	0. 10 S	23. 38 S	17. 55	17. 9
11	8. 26. 10	0. 10	8. 28. 47	0. 11	23. 38	17. 55	16. 33
21	8. 26. 8	0. 11	8. 28. 40	0. 11	23. 38	17. 54	15. 55

Days of the Week.	Days of the Month.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Sa.	1	7. 12. 40. 42	7. 19. 2. 15	3. 27. 20 S	3. 52. 34 S
Sun.	2	7. 25. 27. 13	8. 1. 55. 44	4. 15. 7	4. 34. 37
M.	3	8. 8. 27. 57	8. 15. 3. 58	4. 50. 44	5. 3. 10
Tu.	4	8. 21. 43. 55	8. 28. 27. 54	5. 11. 39	5. 15. 58
W.	5	9. 5. 15. 59	9. 12. 8. 13	5. 15. 55	5. 11. 23
Th.	6	9. 19. 4. 36	9. 26. 5. 5	5. 2. 17	4. 48. 37
F.	7	10. 3. 9. 34	10. 10. 17. 51	4. 30. 28	4. 7. 58
Sa.	8	10. 17. 29. 39	10. 24. 44. 37	3. 41. 23	3. 11. 5
Sun.	9	11. 2. 2. 16	11. 9. 22. 3	2. 37. 29	2. 1. 8
M.	10	11. 16. 43. 19	11. 24. 5. 19	1. 22. 40	0. 42. 46 S
Tu.	11	0. 1. 27. 15	0. 8. 48. 17	0. 2. 10 S	0. 38. 20 N
W.	12	0. 16. 7. 32	0. 23. 24. 10	1. 18. 2 N	1. 56. 12
Th.	13	1. 0. 37. 23	1. 7. 46. 27	2. 32. 10	3. 5. 21
F.	14	1. 14. 50. 44	1. 21. 49. 41	3. 35. 16	4. 1. 34
Sa.	15	1. 28. 42. 56	2. 5. 30. 13	4. 23. 58	4. 42. 18
Sun.	16	2. 12. 11. 24	2. 18. 46. 30	4. 56. 28	5. 6. 28
M.	17	2. 25. 15. 39	3. 1. 39. 7	5. 12. 22	5. 14. 15
Tu.	18	3. 7. 57. 14	3. 14. 10. 26	5. 12. 18	5. 6. 42
W.	19	3. 20. 19. 12	3. 26. 24. 5	4. 57. 37	4. 45. 16
Th.	20	4. 2. 25. 40	4. 8. 24. 33	4. 29. 52	4. 11. 38
F.	21	4. 14. 21. 22	4. 20. 16. 41	3. 50. 47	3. 27. 33
Sa.	22	4. 26. 11. 11	5. 2. 5. 26	3. 2. 10	2. 34. 51
Sun.	23	5. 8. 0. 1	5. 13. 55. 30	2. 5. 52	1. 35. 29
M.	24	5. 19. 52. 23	5. 25. 51. 10	1. 3. 58 N	0. 31. 35 N
Tu.	25	6. 1. 52. 17	6. 7. 56. 8	0. 1. 20 S	0. 34. 26 S
W.	26	6. 14. 3. 3	6. 20. 13. 17	1. 7. 23	1. 39. 49
Th.	27	6. 26. 27. 4	7. 2. 44. 33	2. 11. 20	2. 41. 31
F.	28	7. 9. 5. 50	7. 15. 30. 57	3. 9. 58	3. 36. 16
Sa.	29	7. 21. 59. 52	7. 28. 32. 32	4. 0. 1	4. 20. 50
Sun.	30	8. 5. 8. 49	8. 11. 48. 33	4. 38. 22	4. 52. 17

THE MOON's								
Days of the Week.	Days of the Month.	Age.	Passage Merid.	Right Ascension.		Declination.		
				Noon.	Midnight	Noon.	Midnight.	
				D. M.	D. M.	D. M.	D. M.	
				D.	H. M.	D. M.	D. M.	
Sa.	1	19	14. 22	219. 8	225. 27	18. 57 S	21. 13 S	
Sun.	2	20	15. 14	232. 0	238. 49	23. 16	25. 3	
M.	3	21	16. 10	245. 52	253. 9	26. 32	27. 39	
Tu.	4	22	17. 9	260. 38	268. 15	28. 23	28. 43	
W.	5	23	18. 9	275. 58	283. 43	28. 37	28. 5	
Th.	6	24	19. 10	291. 26	299. 5	27. 6	25. 41	
F.	7	25	10. 7	306. 35	313. 57	23. 51	21. 39	
Sa.	8	26	21. 1	321. 8	328. 9	19. 7	16. 17	
Sun.	9	27	21. 53	335. 0	341. 43	13. 12	9. 56	
M.	10	28	22. 43	348. 20	354. 52	6. 31 S	3. 0 S.	
Tu.	11	29	23. 33	1. 21	7. 50	0. 33 N	4. 5 N	
W.	12	1	6	14. 21	20. 55	7. 33	10. 54	
Th.	13	2	0. 24	27. 36	34. 22	14. 5	17. 2	
F.	14	3	1. 17	41. 16	48. 17	19. 44	22. 8	
Sa.	15	4	2. 12	55. 25	62. 40	24. 12	25. 53	
Sun.	16	5	3. 9	69. 58	77. 18	27. 11	28. 5	
M.	17	6	4. 7	84. 37	91. 52	28. 35	28. 42	
Tu.	18	7	5. 3	99. 1	106. 0	28. 26	27. 48	
W.	19	8	5. 55	112. 48	119. 25	26. 50	25. 34	
Th.	20	9	6. 44	125. 49	132. 1	24. 1	22. 14	
F.	21	10	7. 29	138. 1	143. 50	20. 13	18. 1	
Sa.	22	11	8. 12	149. 30	155. 2	15. 39	13. 9	
Sun.	23	12	8. 52	160. 28	165. 49	10. 31	7. 48	
M.	24	13	9. 32	171. 7	176. 24	5. 0 N	2. 8 N	
Tu.	25	14	10. 12	181. 41	187. 3	0. 46 S	3. 41 S	
W.	26	15	10. 52	192. 29	198. 2	6. 35	9. 27	
Th.	27	16	11. 37	203. 43	209. 35	12. 16	14. 58	
F.	28	17	12. 24	215. 39	221. 56	17. 32	19. 57	
Sa.	29	18	13. 15	228. 28	235. 15	22. 9	24. 6	
Sun.	30	19	14. 11	242. 17	249. 33	25. 45	27. 3	

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight	Noon.	Midnight		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
Sa.	1	15. 16	15. 19	55. 52	56. 7	5081	5062
Sun.	2	15. 23	15. 27	56. 21	56. 36	5044	5025
M.	3	15. 32	15. 37	56. 54	57. 13	5002	4977
Tu.	4	15. 42	15. 47	57. 31	57. 49	4955	4932
W.	5	15. 52	15. 57	58. 7	58. 26	4910	4886
Th.	6	16. 2	16. 7	58. 44	59. 2	4864	4842
F.	7	16. 11	16. 16	59. 19	59. 35	4821	4801
Sa.	8	16. 20	16. 23	59. 49	60. 2	4784	4769
Sun.	9	16. 26	16. 28	60. 12	60. 20	4757	4747
M.	10	16. 29	16. 29	60. 24	60. 25	4742	4741
Tu.	11	16. 28	16. 27	60. 21	60. 15	4746	4753
W.	12	16. 24	16. 20	60. 5	59. 51	4765	4782
Th.	13	16. 15	16. 10	59. 34	59. 14	4803	4827
F.	14	16. 4	15. 57	58. 52	58. 28	4854	4884
Sa.	15	15. 50	15. 43	58. 2	57. 37	4916	4947
Sun.	16	15. 37	15. 29	57. 12	56. 46	4979	5012
M.	17	15. 23	15. 16	56. 21	55. 58	5044	5073
Tu.	18	15. 10	15. 5	55. 36	55. 17	5102	5127
W.	19	15. 1	14. 56	55. 0	54. 45	5149	5169
Th.	20	14. 53	14. 50	54. 33	54. 23	5185	5198
F.	21	14. 49	14. 48	54. 16	54. 12	5207	5213
Sa.	22	14. 47	14. 47	54. 10	54. 10	5215	5215
Sun.	23	14. 48	14. 49	54. 12	54. 16	5213	5207
M.	24	14. 51	14. 53	54. 23	54. 31	5198	5187
Tu.	25	14. 55	14. 59	54. 41	54. 53	5174	5158
W.	26	15. 2	15. 6	55. 6	55. 19	5141	5124
Th.	27	15. 9	15. 14	55. 33	55. 48	5106	5086
F.	28	15. 18	15. 22	56. 4	56. 19	5066	5046
Sa.	29	15. 27	15. 31	56. 35	56. 50	5026	5007
Sun.	30	15. 35	15. 39	57. 5	57. 20	4988	4969

DISTANCES of MOON'S Centre from SUN, and from STARS EAST of her.										
Stars' Names.	Days	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	
α Aquilæ.	1	80. 2. 57	78. 44. 42	77. 26. 28	76. 8. 16	74. 50. 7	73. 32. 3	72. 14. 7	70. 56. 19	
	2	69. 38. 41	68. 21. 15	67. 4. 3	65. 47. 7	64. 30. 27	- - -	- - -	- - -	
Fomalhaut.	2	- - -	- - -	- - -	- - -	87. 47. 26	86. 14. 55	84. 42. 14	83. 9. 22	
	3	81. 36. 20	80. 3. 8	78. 29. 46	76. 56. 15	75. 22. 36	73. 48. 48	72. 14. 52	70. 40. 49	
α Pegasi.	4	69. 0. 39	67. 32. 23	65. 58. 1	64. 23. 35	62. 49. 4	- - -	- - -	- - -	
	4	- - -	- - -	- - -	- - -	84. 43. 40	83. 8. 49	81. 33. 48	79. 58. 35	
	5	78. 23. 11	76. 47. 37	75. 11. 54	73. 36. 4	72. 0. 5	70. 23. 58	68. 47. 46	67. 11. 29	
	6	65. 35. 9	- - -	- - -	- - -	- - -	- - -	- - -	- - -	
The Sun.	3	- - -	- - -	- - -	120. 28. 35	118. 56. 55	117. 25. 1	115. 52. 53	114. 20. 31	
	4	112. 47. 55	111. 15. 4	109. 41. 59	108. 8. 39	106. 35. 3	105. 1. 12	103. 27. 6	101. 52. 45	
	5	100. 18. 8	98. 43. 15	97. 8. 6	95. 32. 42	93. 57. 2	92. 21. 6	90. 44. 54	89. 8. 26	
	6	87. 31. 41	85. 54. 40	84. 17. 23	82. 39. 49	81. 2. 0	79. 23. 55	77. 45. 33	76. 6. 55	
	7	74. 28. 1	72. 48. 52	71. 9. 28	69. 29. 48	67. 49. 52	66. 9. 42	64. 29. 18	62. 48. 39	
	8	61. 7. 47	59. 26. 41	57. 45. 22	56. 3. 51	54. 22. 7	52. 40. 11	50. 58. 5	49. 15. 49	
	9	47. 33. 23	45. 50. 47	44. 8. 3	42. 25. 11	40. 42. 12	- - -	- - -	- - -	
	14	- - -	- - -	- - -	- - -	58. 40. 43	56. 57. 0	55. 13. 41	53. 30. 46	
	15	51. 48. 15	50. 6. 8	48. 24. 24	46. 43. 5	45. 2. 10	43. 21. 39	41. 41. 33	40. 1. 51	
Pollux.	16	38. 22. 33	36. 43. 40	35. 5. 11	33. 27. 5	31. 49. 23	- - -	- - -	- - -	

Stars' Names.	Days	Noon.		III ^b .		VI ^b .		IX ^b .		Midnight.		XV ^b .		XVIII ^b .		XXI ^b .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Regulus.	16	-	-	-	-	-	-	-	-	68. 36. 13	66. 58. 51	65. 21. 52	63. 45. 16				
	17	62. 9. 2		60. 33. 10		58. 57. 39		57. 22. 28		55. 47. 39	54. 13. 10	52. 39. 0	51. 5. 10				
	18	49. 31. 39		47. 58. 27		46. 25. 32		44. 52. 55		43. 20. 36	41. 48. 33	40. 16. 45	38. 45. 14				
	19	37. 13. 58		35. 42. 57		34. 12. 10		32. 41. 36		31. 11. 17	29. 41. 11	28. 11. 17	26. 41. 35				
	20	25. 12. 5		-		-		-		-	-	-	-	-			
Spica η .	20	79. 6. 54		77. 37. 8		76. 7. 30		74. 37. 59		73. 8. 36	71. 39. 20	70. 10. 9	68. 41. 4				
	21	67. 12. 4		65. 43. 9		64. 14. 17		62. 45. 28		61. 16. 42	59. 47. 58	58. 19. 15	56. 50. 33				
	22	55. 21. 52		53. 53. 11		52. 24. 28		50. 55. 44		49. 27. 0	47. 58. 13	46. 29. 23	45. 0. 29				
	23	43. 31. 32		42. 2. 31		40. 33. 25		39. 4. 13		37. 34. 57	36. 5. 35	34. 36. 6	33. 6. 30				
	24	31. 36. 47		-		-		-		-	-	-	-	-			
Antares.	24	77. 30. 48		76. 0. 57		74. 30. 58		73. 0. 51		71. 30. 35	70. 0. 10	68. 29. 36	66. 58. 52				
	25	65. 27. 59		63. 56. 55		62. 25. 40		60. 54. 14		59. 22. 38	57. 50. 50	56. 18. 51	54. 46. 40				
	26	53. 14. 18		51. 41. 43		50. 8. 56		48. 35. 57		47. 2. 45	45. 29. 21	43. 55. 44	42. 21. 54				
	27	40. 47. 52		39. 13. 36		37. 39. 7		36. 4. 26		34. 29. 31	32. 54. 23	31. 19. 2	29. 43. 28				
	28	28. 7. 41		-		-		-		-	-	-	-	-			
α Aquilæ.	28	82. 59. 36		81. 40. 13		80. 20. 46		79. 1. 16		77. 41. 46	76. 22. 17	75. 2. 50	73. 43. 28				
	29	72. 24. 12		71. 5. 4		69. 46. 5		68. 27. 17		67. 8. 43	-	-	-				
Fomalhaut.	29	-		-		-		-		91. 1. 32	89. 28. 2	87. 54. 21	86. 20. 30				
	30	84. 46. 29		83. 12. 18		81. 37. 58		80. 3. 30		78. 28. 54	76. 54. 10	75. 19. 20	73. 44. 26				
	M.1	72. 9. 26		-		-		-		-	-	-	-				

CONFIGURATIONS OF THE SATELLITES OF JUPITER
at Three Quarters of an Hour past IV o'Clock in the *Morning*.

1	•4	3°	○	1♂2
2		•4•3•2•1	○	
3	3○		•4•2	○ 1°
4			•1	○ •4 •2 •3
5	1.●		2°	○ 3♂4
6		•2	○•1	3° •4 •
7	•		1♂3	○ •2 •4
8		3°	○	•1 2° 4°
9		•3 2°•1	○	4°
10		•2•3	○	1° 4°
11		•1	○	4•2♂3
12		4°	○ 1°	3° 2.●
13		4°•2	○	3° •1○
14	4°		1♂3○•2	
At $\frac{1}{4}$ of an Hour past IV o'Clock in the Morning.				
15	4°	3°	○ 2°•1	
16	4°	•3	1♂2	○
17	•4		•2•3	○ 1°
18	•4		•1	○ 2♂3
19		•4	○ 1♂2	•3
20		2°	•4•1	○ 3°
21	3.●		1°	○ •4 2°
22		3°	○ •1	2° •4
23	•3		1♂2	○ •4
24		2♂3	○ •1	•4
25		•1	○ •3•2	•4
26			○ 1♂2	•3 4°
27		2°	•1	○ 3° 4°
28	1.●		•2	○ 3° 4°
29		3°	4°	○ •1 2°
30	•3	4°	1° 2°	○

Days of the Week.	Days of the Month.	<i>Sundays, Holidays, Terms, &c.</i>	<i>Phases of the MOON.</i>	
			D. H. M.	
			☾ <i>Last Quarter</i> - - -	5. 1. 50
			● <i>New Moon</i> - - - -	11. 21. 9
			☽ <i>First Quarter</i> - -	19. 13. 22
			○ <i>Full Moon</i> - - - -	27. 9. 49
			<i>Other Phenomena.</i>	
M.	1	<i>St. Philip & St. James. In</i>	D. H. M.	
Tu.	2	[1 mo. aft. Eas. 3 ret.	7. 7. 54	☽ ♄.
W.	3	<i>Invention of the Cross.</i>	8. 20. 57	☽ ♃.
Th.	4		13. 23. 49	☽ β ♄.
F.	5		15. 13. 18	☽ ♀.
Sa.	6	<i>John Evan. ante Port. L.</i>	16. 9. 23	☽ Pollux.
			20. 17. 7	☉ enters ♋.
			23. 22. 20	☽ α ♏.
			27. 11. 18	☽ α ♏.
Sun.	7	[<i>Duch. of York. born.</i>		
M.	8	<i>5th S. aft. East. Rog. Sun.</i>		
Tu.	9	<i>In 5 W. aft. East. 4 ret.</i>		
W.	10			
Th.	11	<i>Ascen. Day, Holy Thurs.</i>		
F.	12	<i>On m. aft. Ascen. 5 ret.</i>		
Sa.	13			
Sun.	14	<i>6th Sund. after Easter.</i>		
M.	15	<i>Easter Term ends.</i>		
Tu.	16			
W.	17	<i>Prs. of Wales b.</i>		
Th.	18			
F.	19	<i>Dunstan.</i>		
Sa.	20	<i>Oxford Term ends.</i>		
Sun.	21	<i>Whit-Sunday.</i>		
M.	22	<i>Whit-M. Prs. of Homb. b.</i>		
Tu.	23	<i>Whit-Tuesday.</i>		
W.	24	<i>Oxford Term begins.</i>		
Th.	25	<i>Camb. Term div. n.</i>		
F.	26	<i>Aug. 1st Abp. of Cant.</i>		
Sa.	27	<i>Ven. Bede.</i>		
Sun.	28	<i>Trinity Sunday.</i>		
M.	29	<i>On mor. of Holy Tr. 1 ret.</i>		
Tu.	30	[<i>K. Charles II. restored.</i>		
W.	31			

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Sub. from app. Time.</i>	Diff.
		Longitude.	Rt. Ascen. <i>in Time.</i>	Declin. <i>North.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
M.	1	1. 10. 58. 44	2. 34. 11, 5	15. 8. 15	3. 5, 2	7, 4
Tu.	2	1. 11. 56. 50	2. 38. 0, 6	15. 26. 14	3. 12, 6	6, 9
W.	3	1. 12. 54. 55	2. 41. 50, 3	15. 43. 57	3. 19, 5	6, 3
Th.	4	1. 13. 52. 59	2. 45. 40, 6	16. 1. 25	3. 25, 8	5, 6
F.	5	1. 14. 51. 1	2. 49. 31, 4	16. 18. 37	3. 31, 4	5, 1
Sa.	6	1. 15. 49. 3	2. 53. 22, 9	16. 35. 33	3. 36, 5	4, 5
Sun.	7	1. 16. 47. 2	2. 57. 14, 9	16. 52. 13	3. 41, 0	3, 9
M.	8	1. 17. 45. 1	3. 1. 7, 6	17. 8. 36	3. 44, 9	3, 4
Tu.	9	1. 18. 42. 58	3. 5. 0, 8	17. 24. 42	3. 48, 3	2, 7
W.	10	1. 19. 40. 54	3. 8. 54, 6	17. 40. 30	3. 51, 0	2, 1
Th.	11	1. 20. 38. 49	3. 12. 49, 0	17. 56. 1	3. 53, 1	1, 6
F.	12	1. 21. 36. 42	3. 16. 44, 0	18. 11. 14	3. 54, 7	1, 0
Sa.	13	1. 22. 34. 34	3. 20. 39, 6	18. 26. 9	3. 55, 7	0, 4
Sun.	14	1. 23. 32. 24	3. 24. 35, 7	18. 40. 45	3. 56, 1	0, 1
M.	15	1. 24. 30. 13	3. 28. 32, 4	18. 55. 2	3. 56, 0	0, 7
Tu.	16	1. 25. 28. 0	3. 32. 29, 6	19. 9. 0	3. 55, 3	1, 3
W.	17	1. 26. 25. 46	3. 36. 27, 5	19. 22. 38	3. 54, 0	1, 8
Th.	18	1. 27. 23. 29	3. 40. 25, 8	19. 35. 57	3. 52, 2	2, 3
F.	19	1. 28. 21. 12	3. 44. 24, 7	19. 48. 56	3. 49, 9	2, 9
Sa.	20	1. 29. 18. 52	3. 48. 24, 1	20. 1. 35	3. 47, 0	3, 4
Sun.	21	2. 0. 16. 32	3. 52. 24, 1	20. 13. 53	3. 43, 6	3, 9
M.	22	2. 1. 14. 9	3. 56. 24, 6	20. 25. 50	3. 39, 7	4, 4
Tu.	23	2. 2. 11. 45	4. 0. 25, 5	20. 37. 26	3. 35, 3	4, 9
W.	24	2. 3. 9. 20	4. 4. 27, 0	20. 48. 41	3. 30, 4	5, 4
Th.	25	2. 4. 6. 53	4. 8. 29, 0	20. 59. 35	3. 25, 0	5, 9
F.	26	2. 5. 4. 25	4. 12. 31, 5	21. 10. 7	3. 19, 1	6, 4
Sa.	27	2. 6. 1. 56	4. 16. 34, 5	21. 20. 17	3. 12, 7	6, 9
Sun.	28	2. 6. 59. 26	4. 20. 37, 9	21. 30. 6	3. 5, 8	7, 3
M.	29	2. 7. 56. 54	4. 24. 41, 7	21. 39. 31	2. 58, 5	7, 7
Tu.	30	2. 8. 54. 22	4. 28. 46, 1	21. 48. 35	2. 50, 8	8, 2
W.	31	2. 9. 51. 49	4. 32. 50, 9	21. 57. 16	2. 42, 6	

Days	Time of ☉'s Semidiam. pass ^d . Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter.	Hourly Motion.	Logar. Distance.	S, D. M.
1	1. 5, 8	15. 53, 3	2. 25, 4	0. 00356	0. 0. 1
7	1. 6, 3	15. 51, 9	2. 24, 9	0. 00418	11. 29. 42
13	1. 6, 8	15. 50, 7	2. 24, 6	0. 00475	11. 29. 23
19	1. 7, 2	15. 49, 5	2. 24, 2	0. 00527	11. 29. 4
25	1. 7, 7	15. 48, 5	2. 23, 9	0. 00574	11. 28. 45

ECLIPSES OF THE SATELLITES OF JUPITER.
MEAN TIME.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	3. 55. 28	2	22. 37. 42	4	18. 17. 59 Im.
2	22. 23. 54	6	11. 55. 51	4	21. 40. 57 E.
4	16. 52. 19	10	1. 15. 10	11	22. 18. 35 Im.
6	11. 20. 43	13	14. 33. 18	12	1. 40. 57 E.
8	5. 49. 7	17	3. 52. 33	19	2. 19. 0 Im.
10	0. 17. 31	20	17. 10. 43	19	5. 40. 45 E.
11	18. 45. 55	24	6. 29. 54	26	6. 20. 4 Im.
13	13. 14. 20	27	19. 48. 0	26	9. 41. 11 E.
15	7. 42. 43	31	9. 7. 9		
17	2. 11. 8				
18	20. 39. 31				
20	15. 7. 56				
22	9. 36. 18				
24	4. 4. 42				
25	22. 33. 5				
27	17. 1. 31				
29	11. 29. 52				
31	5. 58. 17				
IV. Satellite.					
14	18. 38. 24 Im.				
14	23. 1. 19 E.				
31	12. 52. 5 Im.				
31	17. 10. 25 E.				

Days	THE PLANETS'							
	Heliocentric		Geocentric		Declin.	Rt. Asc.	Passage	
	Long.	Lat.	Long.	Lat.		in Time.	Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	H. M.	
♿ MERCURY. Gr. Elong. 10 ^d .								
1	8. 16. 51	3. 35 S	0. 17. 36	2. 26 S	4. 40 N	1. 9	22. 33	
4	8. 25. 8	4. 25	0. 19. 5	2. 49	4. 53	1. 15	22. 28	
7	9. 3. 32	5. 10	0. 21. 9	3. 4	5. 25	1. 23	22. 26	
10	9. 12. 11	5. 49	0. 23. 45	3. 13	6. 15	1. 33	22. 24	
13	9. 21. 10	6. 21	0. 26. 50	3. 14	7. 20	1. 44	22. 24	
16	10. 0. 35	6. 45	1. 0. 21	3. 10	8. 38	1. 57	22. 26	
19	10. 10. 35	6. 58	1. 4. 15	3. 0	10. 8	2. 12	22. 29	
22	10. 21. 18	6. 58	1. 8. 32	2. 45	11. 46	2. 28	22. 34	
25	11. 2. 53	6. 42	1. 13. 11	2. 24	13. 32	2. 46	22. 40	
28	11. 15. 32	6. 7	1. 18. 12	2. 0	15. 21	3. 5	22. 47	
31	11. 29. 22	5. 7	1. 23. 33	1. 32	17. 12	3. 26	22. 57	
♀ VENUS. Gr. Elong. 19 ^d .								
1	5. 13. 18	3. 23 N	2. 25. 9	2. 48 N	26. 10 N	5. 38	3. 4	
7	5. 23. 2	3. 22	3. 1. 32	2. 56	26. 23	6. 7	3. 9	
13	6. 2. 45	3. 14	3. 7. 42	3. 0	26. 14	6. 34	3. 14	
19	6. 12. 27	3. 1	3. 13. 41	2. 59	25. 44	7. 1	3. 16	
25	6. 22. 7	2. 42	3. 19. 25	2. 53	24. 54	7. 26	3. 17	
♂ MARS.								
1	5. 12. 24	1. 41 N	4. 5. 18	1. 58 N	20. 52 N	8. 33	5. 58	
7	5. 15. 2	1. 39	4. 8. 7	1. 51	20. 3	8. 44	5. 47	
13	5. 17. 40	1. 37	4. 11. 2	1. 45	19. 9	8. 56	5. 35	
19	5. 20. 19	1. 34	4. 14. 2	1. 38	18. 12	9. 8	5. 23	
25	5. 22. 58	1. 31	4. 17. 8	1. 32	17. 11	9. 20	5. 11	
♃ JUPITER.								
1	11. 6. 16	1. 7 S	11. 15. 48	1. 1 S	6. 32 S	23. 9	20. 32	
7	11. 6. 48	1. 7	11. 16. 53	1. 2	6. 8	23. 13	20. 13	
13	11. 7. 21	1. 8	11. 17. 54	1. 3	5. 45	23. 17	19. 54	
19	11. 7. 53	1. 8	11. 18. 51	1. 5	5. 24	23. 20	19. 33	
25	11. 8. 26	1. 8	11. 19. 43	1. 6	5. 5	23. 24	19. 13	
♄ SATURN.								
1	0. 4. 51	2. 23 S	0. 8. 9	2. 12 S	1. 13 N	0. 33	21. 56	
7	0. 5. 3	2. 23	0. 8. 49	2. 12	1. 28	0. 36	21. 36	
13	0. 5. 15	2. 23	0. 9. 26	2. 13	1. 42	0. 38	21. 14	
19	0. 5. 27	2. 24	0. 10. 2	2. 14	1. 55	0. 40	20. 53	
25	0. 5. 39	2. 24	0. 10. 36	2. 16	2. 7	0. 43	20. 31	
♅ GEORGIAN.								
1	8. 26. 15	0. 11 S	8. 28. 28	0. 11 S	23. 38 S	17. 53	15. 17	
11	8. 26. 22	0. 11	8. 28. 12	0. 11	23. 38	17. 52	14. 37	
21	8. 26. 29	0. 11	8. 27. 53	0. 11	23. 38	17. 51	13. 56	

Days of the Week.	Days of the Month.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
M.	1	8. 18. 31. 35	8. 25. 17. 44	5. 2. 17 S	5. 8. 10 S
Tu.	2	9. 2. 6. 47	9. 8. 58. 31	5. 9. 44	5. 6. 52
W.	3	9. 15. 52. 44	9. 22. 49. 15	4. 59. 33	4. 47. 40
Th.	4	9. 29. 47. 52	10. 6. 48. 27	4. 31. 46	4. 11. 35
F.	5	10. 13. 50. 49	10. 20. 54. 46	3. 47. 30	3. 19. 52
Sa.	6	10. 28. 0. 11	11. 5. 6. 51	2. 49. 4	2. 15. 33
Sun.	7	11. 12. 14. 34	11. 19. 23. 4	1. 39. 51	1. 2. 33 S
M.	8	11. 26. 32. 3	0. 3. 41. 9	0. 24. 15 S	0. 14. 25 N
Tu.	9	0. 10. 49. 57	0. 17. 58. 1	0. 52. 49 N	1. 30. 17
W.	10	0. 25. 4. 48	1. 2. 9. 48	2. 6. 10	2. 39. 54
Th.	11	1. 9. 12. 26	1. 16. 12. 7	3. 10. 57	3. 38. 52
F.	12	1. 23. 8. 21	2. 0. 0. 37	4. 3. 16	4. 23. 52
Sa.	13	2. 6. 48. 30	2. 13. 31. 40	4. 40. 28	4. 52. 57
Sun.	14	2. 20. 9. 51	2. 26. 42. 55	5. 1. 18	5. 5. 33
M.	15	3. 3. 10. 49	3. 9. 33. 38	5. 5. 49	5. 2. 15
Tu.	16	3. 15. 51. 32	3. 22. 4. 49	4. 55. 2	4. 44. 23
W.	17	3. 28. 13. 50	4. 4. 19. 2	4. 30. 32	4. 13. 45
Th.	18	4. 10. 20. 56	4. 16. 20. 5	3. 54. 17	3. 32. 21
F.	19	4. 22. 17. 5	4. 28. 12. 36	3. 8. 14	2. 42. 11
Sa.	20	5. 4. 7. 15	5. 10. 1. 44	2. 14. 26	1. 45. 16
Sun.	21	5. 15. 56. 41	5. 21. 52. 48	1. 14. 57	0. 43. 43 N
M.	22	5. 27. 50. 42	6. 3. 51. 1	0. 11. 53 N	0. 20. 16 S
Tu.	23	6. 9. 54. 19	6. 16. 1. 6	0. 52. 26 S	1. 24. 16
W.	24	6. 22. 11. 51	6. 28. 26. 58	1. 55. 25	2. 25. 30
Th.	25	7. 4. 46. 44	7. 11. 11. 23	2. 54. 7	3. 20. 53
F.	26	7. 17. 41. 1	7. 24. 15. 38	3. 45. 21	4. 7. 7
Sa.	27	8. 0. 55. 9	8. 7. 39. 21	4. 25. 46	4. 40. 56
Sun.	28	8. 14. 27. 56	8. 21. 20. 32	4. 52. 17	4. 59. 31
M.	29	8. 28. 16. 41	9. 5. 15. 50	5. 2. 24	5. 0. 49
Tu.	30	9. 12. 17. 29	9. 19. 21. 4	4. 54. 41	4. 44. 1
W.	31	9. 26. 26. 3	10. 3. 31. 57	4. 28. 58	4. 9. 44

Days of the Week.	Days of the Month.	THE MOON'S					
		Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	Midn.	Noon.	Midnight.
				D. M.	D. M.	D. M.	D. M.
M.	1	20	15. 10	257. 2	264. 40	27. 59 S	28. 31 S
Tu.	2	21	16. 11	272. 24	280. 10	28. 37	28. 16
W.	3	22	17. 10	287. 54	295. 32	27. 28	26. 15
Th.	4	23	18. 7	303. 2	310. 21	24. 38	22. 39
F.	5	24	19. 1	317. 29	324. 26	20. 19	17. 41
Sa.	6	25	19. 51	331. 12	337. 48	14. 49	11. 45
Sun.	7	26	20. 40	344. 16	350. 39	8. 31	5. 10 S
M.	8	27	21. 29	356. 59	3. 18	1. 45 S	1. 41 N
Tu.	9	28	22. 17	9. 37	15. 59	5. 6 N	8. 26
W.	10	29	23. 8	22. 27	29. 2	11. 40	14. 44
Th.	11	1	0	35. 45	42. 37	17. 36	20. 12
F.	12	2	0. 2	49. 38	56. 48	22. 30	24. 28
Sa.	13	3	0. 58	64. 5	71. 28	26. 5	27. 18
Sun.	14	4	1. 55	78. 53	86. 17	28. 7	28. 31
M.	15	5	2. 52	93. 36	100. 40	28. 31	28. 8
Tu.	16	6	3. 47	107. 52	114. 42	27. 24	26. 20
W.	17	7	4. 38	121. 20	127. 45	24. 57	23. 18
Th.	18	8	5. 25	133. 56	139. 55	21. 25	19. 20
F.	19	9	6. 9	145. 43	151. 21	17. 4	14. 39
Sa.	20	10	6. 50	156. 51	162. 14	12. 6	9. 26
Sun.	21	11	7. 30	167. 33	172. 50	6. 42	3. 54 N
M.	22	12	8. 9	178. 6	183. 24	1. 2 N	1. 50 S
Tu.	23	13	8. 49	188. 45	194. 12	4. 44 S	7. 36
W.	24	14	9. 32	199. 47	205. 32	10. 26	13. 12
Th.	25	15	10. 17	211. 29	217. 39	15. 52	18. 23
F.	26	16	11. 7	224. 5	230. 47	20. 44	22. 51
Sa.	27	17	12. 2	237. 46	245. 1	24. 42	26. 14
Sun.	28	18	13. 1	252. 30	260. 12	27. 24	28. 10
M.	29	19	14. 2	268. 3	275. 58	28. 30	28. 23
Tu.	30	20	15. 3	283. 52	291. 42	27. 48	26. 45
W.	31	21	16. 3	299. 24	306. 54	25. 17	23. 26

Days of the Week.	Days of the Month.	THE MOON'S					
		Semidiameter.		Hor. Parallax.		Proportional Logarithm.	
		Noon.	Midn.	Noon.	Midn.		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
M.	1	15. 43	15. 47	57. 34	57. 48	4951	4933
Tu.	2	15. 51	15. 54	58. 1	58. 14	4917	4901
W.	3	15. 57	16. 0	58. 26	58. 37	4886	4871
Th.	4	16. 3	16. 6	58. 48	58. 58	4859	4846
F.	5	16. 8	16. 10	59. 7	59. 15	4835	4826
Sa.	6	16. 12	16. 14	59. 22	59. 27	4817	4811
Sun.	7	16. 15	16. 15	59. 31	59. 33	4806	4804
M.	8	16. 15	16. 15	59. 34	59. 32	4802	4805
Tu.	9	16. 14	16. 12	59. 28	59. 22	4810	4817
W.	10	16. 10	16. 7	59. 13	59. 2	4828	4842
Th.	11	16. 3	15. 59	58. 49	58. 33	4859	4877
F.	12	15. 54	15. 49	58. 15	57. 56	4900	4923
Sa.	13	15. 43	15. 37	57. 36	57. 15	4949	4975
Sun.	14	15. 32	15. 26	56. 53	56. 32	5003	5029
M.	15	15. 20	15. 14	56. 11	55. 50	5056	5084
Tu.	16	15. 9	15. 4	55. 32	55. 14	5107	5130
W.	17	15. 0	14. 57	54. 58	54. 45	5150	5169
Th.	18	14. 54	14. 51	54. 34	54. 25	5183	5195
F.	19	14. 49	14. 48	54. 19	54. 15	5203	5209
Sa.	20	14. 48	14. 48	54. 14	54. 15	5210	5209
Sun.	21	14. 49	14. 51	54. 19	54. 25	5203	5196
M.	22	14. 53	14. 56	54. 33	54. 43	5185	5170
Tu.	23	14. 59	15. 3	54. 55	55. 10	5155	5136
W.	24	15. 8	15. 13	55. 27	55. 45	5112	5090
Th.	25	15. 18	15. 23	56. 4	56. 23	5065	5041
F.	26	15. 28	15. 34	56. 42	57. 1	5018	4992
Sa.	27	15. 39	15. 44	57. 20	57. 38	4968	4945
Sun.	28	15. 49	15. 53	57. 56	58. 12	4923	4903
M.	29	15. 57	16. 0	58. 26	58. 39	4886	4870
Tu.	30	16. 3	16. 6	58. 50	58. 59	4856	4845
W.	31	16. 8	16. 10	59. 6	59. 12	4837	4830

DISTANCES of MOON'S Centre from SUN, and from STARS EAST of her.																	
Stars' Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Fomalhaut.	1	72.	9. 26	70.	34. 23	68.	59. 16	67.	24. 6	65.	48. 55	64.	13. 44	62.	38. 34	61.	3. 26
	2	59.	28. 23	57.	53. 24	56.	18. 32	54.	43. 50	53.	9. 19	51.	35. 1	50.	0. 59	48.	27. 13
	3	46.	53. 47	-	-	-	-	-	-	-	-	-	-	-	-	-	-
α Pegasi.	3	68.	29. 25	66.	53. 24	65.	17. 24	63.	41. 27	62.	5. 35	60.	29. 51	58.	54. 15	57.	18. 52
	4	55.	43. 41	54.	8. 43	52.	34. 4	50.	59. 46	49.	25. 52	47.	52. 21	46.	19. 23	44.	47. 2
	5	43.	15. 24	41.	44. 33	40.	14. 34	38.	45. 33	37.	17. 34	-	-	-	-	-	-
The Sun.	2	-	-	-	-	-	-	-	-	-	-	-	-	120.	7. 15	118.	31. 29
	3	116.	55. 32	115.	19. 26	113.	43. 10	112.	6. 45	110.	30. 11	108.	53. 28	107.	16. 36	105.	39. 35
	4	104.	2. 25	102.	25. 6	100.	47. 39	99.	10. 4	97.	32. 20	95.	54. 28	94.	16. 28	92.	38. 20
	5	91.	0. 5	89.	21. 42	87.	43. 12	86.	4. 35	84.	25. 50	82.	46. 59	81.	8. 1	79.	28. 57
	6	77.	49. 46	76.	10. 28	74.	31. 6	72.	51. 38	71.	12. 6	69.	32. 29	67.	52. 46	66.	12. 59
	7	64.	33. 9	62.	53. 15	61.	13. 19	59.	33. 20	57.	53. 19	56.	13. 16	54.	33. 12	52.	53. 7
	8	51.	13. 2	49.	32. 57	47.	52. 53	46.	12. 52	44.	32. 52	42.	52. 56	41.	13. 3	39.	33. 16
	9	37.	53. 33	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	14	-	-	-	-	-	-	-	-	60.	41. 51	59.	4. 53	57.	28. 14	55.	51. 55
Regulus.	15	54.	15. 56	52.	40. 16	51.	4. 54	49.	29. 51	47.	55. 7	46.	20. 42	44.	46. 34	43.	12. 44
	16	41.	39. 12	40.	5. 57	38.	32. 59	37.	0. 17	35.	27. 52	33.	55. 43	32.	23. 50	30.	52. 12
	17	29.	20. 50	27.	49. 43	26.	18. 51	24.	48. 13	23.	17. 50	-	-	-	-	-	-

[illegible]

Stars' Names.	Days	Noon. D. M. S.	III ^b . D. M. S.	VII ^b . D. M. S.	IX ^b . D. M. S.	Midnight. D. M. S.	XV ^a . D. M. S.	XVIII ^b . D. M. S.	XXI ^b . D. M. S.
Pollux.	19	- - -	- - -	- - -	- - -	37. 33. 0	39. 1. 45	40. 30. 29	41. 59. 13
	20	43. 27. 57	44. 56. 41	46. 25. 27	47. 54. 14	49. 23. 3	50. 51. 54	52. 20. 50	53. 49. 49
	21	55. 18. 52	56. 48. 0	58. 17. 14	59. 46. 34	61. 16. 1	62. 45. 35	64. 15. 17	65. 45. 7
	22	67. 15. 5	68. 45. 12	70. 15. 30	71. 45. 58	73. 16. 36	- - -	- - -	- - -
Regulus.	22	- - -	- - -	- - -	- - -	36. 31. 39	38. 2. 20	39. 33. 14	41. 4. 20
	23	42. 35. 39	44. 7. 11	45. 38. 56	47. 10. 56	48. 43. 9	50. 15. 37	51. 48. 21	53. 21. 21
	24	54. 54. 35	56. 28. 5	58. 1. 52	59. 35. 54	61. 10. 13	62. 44. 48	64. 19. 40	65. 54. 50
	25	67. 30. 16	69. 6. 0	70. 42. 1	72. 18. 20	73. 54. 57	- - -	- - -	- - -
Spica m.	25	- - -	- - -	- - -	- - -	19. 52. 19	21. 29. 17	23. 6. 32	24. 44. 6
	26	26. 21. 57	28. 0. 5	29. 38. 30	31. 17. 14	32. 56. 14	34. 35. 32	36. 15. 0	37. 54. 57
	27	39. 35. 4	41. 15. 28	42. 56. 8	44. 37. 4	46. 18. 16	47. 59. 43	49. 41. 26	51. 23. 23
	28	53. 5. 35	54. 48. 1	56. 30. 42	58. 13. 36	59. 56. 43	61. 40. 3	63. 23. 36	65. 7. 20
Antares.	29	66. 51. 17	68. 35. 25	70. 19. 43	72. 4. 11	73. 48. 49	- - -	- - -	- - -
	29	- - -	- - -	- - -	- - -	27. 54. 31	29. 39. 20	31. 24. 17	33. 9. 23
	30	34. 54. 38	36. 40. 1	38. 25. 30	40. 11. 7	41. 56. 51	43. 42. 41	45. 28. 36	47. 14. 37
	31 J. 1	49. 0. 43 63. 11. 46	50. 46. 54	52. 33. 9	54. 19. 27	56. 5. 50	57. 52. 16	59. 38. 44	61. 25. 14

CONFIGURATIONS of the SATELLITES of JUPITER,
at $\frac{3}{4}$ of an Hour past III o'Clock in the *Morning*.

1		4°	2 6 3	○	.1	
2		4°		1°	○ .3 .2	
3	.4				○ 1 6 2	.3
4	.4		2°	.1	○	3°
5		.4		.2	○ 1° 3°	
6	.1 ○		.4 3°		○	.2
7	2. ●		3°	1 6 4	○	
8			.2 .2		○ .1 .4	
9	.3 ○			1°	○ .2	.4
10					○ .1 .2 .3	.4
11			2° .1		○	3° .4
12			.2		○ 1° 3°	4°
13			3° .1		○	.2 4°
14	1. ●		3°		○ 2°	4°
15			.3 .3		○ .1 4°	
At a Quarter past III o'Clock in the <i>Morning</i> .						
16			1 6 4 .3	○ .2		
17		4°			○ .1 2° .3	
18		4°		1 6 2	○	3°
19			.2		○ 1° 3°	
20	.4			1 6 3	○	.2
21	.4		3°		○ 1° 2°	
22		.4 .3	2°		○	.1 ○
23			.4 .3	1°	○	.2 ○
24					○ .1 .2 2°	.4 ○
25			1° 2°		○	.4 .2
26			.2		○ 1° 3° .4	
27	3. ●		.1		○ .2	.4
28			3°		○ 1° 2°	.4
29	.1 ○		.2 2°		○	.4
30	1. ●		.3 .2		○	.4
31					○ .1 .3 .2 4°	

Days of the Week.	Days of the Month.	<i>Sundays, Holidays, Terms, &c.</i>	<i>Phases of the MOON.</i>
			D. H. M. ☾ <i>Last Quarter</i> - - 3. 6. 46 ● <i>New Moon</i> - - - 10. 7. 40 ☽ <i>First Quarter</i> - - 18. 7. 2 ○ <i>Full Moon</i> - - - 25. 19. 4
Th.	1	Nicomede.	<i>Other Phenomena.</i>
F.	2	Trinity Terms begins.	D. H. M. 3. 20. 17 ☽ ♄.
Sa.	3		10. 8. 16 ☽ β ♄.
Sun.	4	1st S. af. T. K.G. 3 b: 1738	12. 17. 45 ☽ Pollux.
M.	5	Bonif. D. of Cumb. b. In 8	12. 22. 24 ☽ α Ω, * 46' † S. of ☽.
Tu.	6	[days of H. T. 2 ret.	15. 21. 27 ☽ ☽.
W.	7		20. 6. 50 ☽ α ♀.
Th.	8		21. 1. 43 ☉ enters ♍.
F.	9		23. 20. 14 ☽ α ♀.
Sa.	10		
Sun.	11	2d S. af. T. St. Barnabas	
M.	12	In 15 days of H. Tr. 3 ret.	
Tu.	13		
W.	14		
Th.	15		
F.	16		
Sa.	17	St. Alban.	
Sun.	18	3d Sunday after Trinity.	
M.	19	In 3 weeks of H. Tr. 4 ret.	- Sir Joseph Banks died at 8 ^h 20m.
Tu.	20	Tr. of Edw. K. of W. Sax.	
W.	21	Trinity Term ends.	
Th.	22		
F.	23		
Sa.	24	Nativity of St. J. Baptist.	
Sun.	25	4th Sunday after Trinity.	
M.	26		
Tu.	27		
W.	28		
Th.	29	St. Peter.	
F.	30		

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Sub. from</i>	Diff.
		Longitude.	Rt. Ascen. <i>in Time.</i>	Declin. <i>North.</i>	<i>app. Time.</i>	
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Th.	1	2. 10. 49. 15	4. 36. 56, 1	22. 5. 33	2. 33, 9	
F.	2	2. 11. 46. 41	4. 41. 1, 8	22. 13. 28	2. 24, 8	9, 1
Sa.	3	2. 12. 44. 6	4. 45. 7, 9	22. 21. 0	2. 15, 2	9, 6
Sun.	4	2. 13. 41. 31	4. 49. 14, 3	22. 28. 8	2. 5, 4	9, 8
M.	5	2. 14. 38. 55	4. 53. 21, 2	22. 34. 53	1. 55, 2	10, 2
						10, 6
Tu.	6	2. 15. 36. 13	4. 57. 28, 4	22. 41. 15	1. 44, 6	11, 0
W.	7	2. 16. 33. 41	5. 1. 35, 9	22. 47. 12	1. 33, 6	11, 2
Th.	8	2. 17. 31. 4	5. 5. 43, 8	22. 52. 46	1. 22, 4	11, 6
F.	9	2. 18. 28. 26	5. 9. 51, 9	22. 57. 55	1. 10, 8	11, 8
Sa.	10	2. 19. 25. 48	5. 14. 0, 3	23. 2. 41	0. 59, 0	12, 0
Sun.	11	2. 20. 23. 8	5. 18. 8, 9	23. 7. 2	0. 47, 0	12, 2
M.	12	2. 21. 20. 28	5. 22. 17, 7	23. 10. 58	0. 34, 8	12, 5
Tu.	13	2. 22. 17. 47	5. 26. 26, 7	23. 14. 30	0. 22, 3	12, 5
W.	14	2. 23. 15. 6	5. 30. 35, 9	23. 17. 38	0. 9, 8	12, 7
Th.	15	2. 24. 12. 24	5. 34. 45, 2	23. 20. 21	<i>Add.</i> 0. 2, 9	12, 8
F.	16	2. 25. 9. 41	5. 38. 54, 6	23. 22. 39	0. 15, 7	12, 9
Sa.	17	2. 26. 6. 57	5. 43. 4, 0	23. 24. 32	0. 28, 6	12, 9
Sun.	18	2. 27. 4. 12	5. 47. 13, 6	23. 26. 1	0. 41, 5	12, 9
M.	19	2. 28. 1. 27	5. 51. 23, 1	23. 27. 5	0. 54, 4	13, 0
Tu.	20	2. 28. 58. 41	5. 55. 32, 6	23. 27. 43	1. 7, 4	12, 9
W.	21	2. 29. 55. 54	5. 59. 42, 1	23. 27. 58	1. 20, 3	12, 9
Th.	22	3. 0. 53. 7	6. 3. 51, 6	23. 27. 47	1. 33, 2	12, 8
F.	23	3. 1. 50. 19	6. 8. 1, 0	23. 27. 12	1. 46, 0	12, 8
Sa.	24	3. 2. 47. 31	6. 12. 10, 4	23. 26. 11	1. 58, 8	12, 6
Sun.	25	3. 3. 44. 42	6. 16. 19, 6	23. 24. 47	2. 11, 4	12, 5
M.	26	3. 4. 41. 53	6. 20. 28, 7	23. 22. 57	2. 23, 9	12, 3
Tu.	27	3. 5. 39. 4	6. 24. 37, 6	23. 20. 43	2. 36, 2	12, 2
W.	28	3. 6. 36. 15	6. 28. 46, 4	23. 18. 4	2. 48, 4	12, 1
Th.	29	3. 7. 33. 25	6. 32. 55, 0	23. 15. 1	3. 0, 5	11, 8
F.	30	3. 8. 30. 36	6. 37. 3, 5	23. 11. 33	3. 12, 3	

Days	Time of ☉'s Semidiam. pass ^d . Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semidia- meter. M. S.	Hourly Motion. M. S.	Logar. Distance.	S. D. M.
1	1. 8, 1	15. 47, 5	2. 23, 6	0. 00620	11. 28. 23
7	1. 8, 3	15. 46, 8	2. 23, 4	0. 00653	11. 28. 4
13	1. 8, 5	15. 46, 2	2. 23, 2	0. 00679	11. 27. 44
19	1. 8, 6	15. 45, 8	2. 23, 1	0. 00697	11. 27. 25
25	1. 8, 6	15. 45, 6	2. 23, 0	0. 00709	11. 27. 6
ECLIPSES OF THE SATELLITES OF JUPITER. MEAN TIME.					
I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	0. 26. 39	3	22. 25. 14	2	10. 20. 22 Im.
3	18. 55. 4	7	11. 44. 18	*2	13. 40. 47 E.
*5	13. 23. 26	11	1. 2. 22	*9	14. 20. 32 Im.
7	7. 51. 51	*14	14. 21. 21	9	17. 40. 16 E.
9	2. 20. 13	18	3. 39. 25	16	18. 20. 26 Im
10	20. 48. 39	21	16. 58. 21	16	21. 39. 32 E.
*12	15. 17. 1	25	6. 16. 22	23	22. 20. 31 Im.
14	9. 45. 27	28	19. 35. 14	24	1. 38. 54 E.
16	4. 13. 49				
17	22. 42. 15				
19	17. 10. 37				
21	11. 39. 3				
23	6. 7. 26				
25	0. 35. 53				
26	19. 4. 16				
*28	13. 32. 44				
30	8. 1. 7				
				IV. Satellite.	
				17	7. 6. 31 Im.
				17	11. 20. 0 E.

Days	THE PLANETS'						
	Heliocentric		Geocentric		Declin.	Rt. Asc.	Passage
	Long.	Lat.	Long.	Lat.		in Time.	Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	H. M.
♿ MERCURY. Sup. ♂ 14 ^d . 14 ^h ₂ .							
1	0. 4. 16	4. 41 S	1. 25. 25	1. 22 S	17. 49 N	3. 34	23. 0
4	0. 19. 53	3. 7	2. 1. 15	0. 50	19. 37	3. 57	23. 12
7	1. 6. 50	1. 9 S	2. 7. 23	0. 17 S	21. 17	4. 22	23. 26
10	1. 24. 55	1. 4 N	2. 13. 46	0. 15 N	22. 44	4. 49	23. 41
13	2. 13. 43	3. 15	2. 20. 18	0. 45	23. 52	5. 18	23. 57
16	3. 2. 37	5. 5	2. 26. 54	1. 11	24. 37	5. 46	0. 7
19	3. 20. 57	6. 20	3. 3. 24	1. 32	24. 57	6. 15	0. 24
22	4. 8. 13	6. 56	3. 9. 44	1. 46	24. 52	6. 43	0. 39
25	4. 24. 7	6. 56	3. 15. 49	1. 54	24. 24	7. 10	0. 53
28	5. 8. 35	6. 29	3. 21. 37	1. 55	23. 37	7. 34	1. 6
30	5. 17. 28	6. 0	3. 25. 19	1. 52	22. 56	7. 51	1. 14
♀ VENUS. Gr. Elong. 19 ^d .							
1	7. 3. 22	2. 15 N	3. 25. 42	2. 37 N	23. 36 N	7. 53	3. 16
7	7. 12. 59	1. 48	4. 0. 41	2. 16	22. 14	8. 14	3. 12
13	7. 22. 34	1. 18	4. 5. 10	1. 47	20. 43	8. 32	3. 5
19	8. 2. 7	0. 46	4. 9. 4	1. 9	19. 7	8. 47	2. 56
25	8. 11. 40	0. 12	4. 12. 11	0. 20	17. 29	8. 59	2. 42
♂ MARS.							
1	5. 26. 4	1. 28 N	4. 20. 49	1. 25 N	15. 55 N	9. 35	4. 57
7	5. 28. 44	1. 24	4. 24. 4	1. 20	14. 46	9. 47	4. 45
13	6. 1. 25	1. 21	4. 27. 22	1. 14	13. 34	10. 0	4. 33
19	6. 4. 6	1. 17	5. 0. 43	1. 9	12. 18	10. 13	4. 21
25	6. 6. 48	1. 13	5. 4. 8	1. 4	11. 0	10. 26	4. 9
♃ JUPITER. ☐ 12 ^d . 13 ^h .							
1	11. 9. 4	1. 9 S	11. 20. 37	1. 8 S	4. 45 S	23. 27	18. 48
7	11. 9. 36	1. 9	11. 21. 19	1. 9	4. 31	23. 30	18. 25
13	11. 10. 9	1. 9	11. 21. 54	1. 11	4. 18	23. 32	18. 3
19	11. 10. 41	1. 10	11. 22. 24	1. 13	4. 8	23. 34	17. 40
25	11. 11. 14	1. 10	11. 22. 48	1. 15	4. 0	23. 35	17. 16
♄ SATURN.							
1	0. 5. 54	2. 24 S	0. 11. 12	2. 17 S	2. 20 N	0. 45	20. 5
7	0. 6. 6	2. 24	0. 11. 41	2. 18	2. 30	0. 47	19. 42
13	0. 6. 18	2. 24	0. 12. 6	2. 20	2. 38	0. 48	19. 19
19	0. 6. 30	2. 24	0. 12. 29	2. 21	2. 46	0. 50	18. 55
25	0. 6. 43	2. 25	0. 12. 48	2. 23	2. 52	0. 51	18. 31
♅ GEORGIAN. ♂ 17 ^d . 17 ^h ₂ .							
1	8. 26. 37	0. 11 S	8. 27. 29	0. 11 S	23. 38 S	17. 49	13. 10
11	8. 26. 44	0. 11	8. 27. 5	0. 12	23. 38	17. 47	12. 27
21	8. 26. 51	0. 11	8. 26. 41	0. 12	23. 37	17. 46	11. 44

Days of the Week.	Days of the Month.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Th.	1	10. 10. 38. 17	10. 17. 44. 39	3. 46. 36 S	3. 19. 56 S
F.	2	10. 24. 50. 44	11. 1. 56. 18	2. 50. 9	2. 17. 47
Sa.	3	11. 9. 1. 7	11. 16. 5. 1	1. 43. 19	1. 7. 20 S
Sun.	4	11. 23. 7. 53	0. 0. 9. 37	0. 30. 24 S	0. 6. 53 N
M.	5	0. 7. 10. 7	0. 14. 9. 19	0. 43. 56 N	1. 20. 12
Tu.	6	0. 21. 7. 3	0. 28. 3. 11	1. 55. 5	2. 28. 6
W.	7	1. 4. 57. 32	1. 11. 49. 52	2. 58. 45	3. 26. 36
Th.	8	1. 18. 39. 56	1. 25. 27. 26	3. 51. 18	4. 12. 31
F.	9	2. 2. 12. 6	2. 8. 53. 38	4. 30. 1	4. 43. 38
Sa.	10	2. 15. 31. 46	2. 22. 6. 13	4. 53. 16	4. 58. 53
Sun.	11	2. 28. 36. 47	3. 5. 3. 21	5. 0. 33	4. 58. 20
M.	12	3. 11. 25. 49	3. 17. 44. 11	4. 52. 23	4. 42. 55
Tu.	13	3. 23. 58. 32	4. 0. 9. 0	4. 30. 7	4. 14. 15
W.	14	4. 6. 15. 51	4. 12. 19. 25	3. 55. 35	3. 34. 23
Th.	15	4. 18. 20. 4	4. 24. 18. 17	3. 10. 56	2. 45. 30
F.	16	5. 0. 14. 35	5. 6. 9. 32	2. 18. 23	1. 49. 50
Sa.	17	5. 12. 3. 46	5. 17. 57. 54	1. 20. 9	0. 49. 35 N
Sun.	18	5. 23. 52. 37	5. 29. 48. 38	0. 18. 26 N	0. 13. 3 S
M.	19	6. 5. 46. 35	6. 11. 47. 12	0. 44. 33 S	1. 15. 46
Tu.	20	6. 17. 51. 7	6. 23. 58. 58	1. 46. 25	2. 16. 8
W.	21	7. 0. 11. 23	7. 6. 28. 51	2. 44. 36	3. 11. 25
Th.	22	7. 12. 51. 49	7. 19. 20. 35	3. 36. 13	3. 58. 35
F.	23	7. 25. 55. 25	8. 2. 36. 25	4. 18. 8	4. 34. 27
Sa.	24	8. 9. 23. 30	8. 16. 16. 29	4. 47. 9	4. 55. 53
Sun.	25	8. 23. 15. 0	9. 0. 18. 33	5. 0. 20	5. 0. 17
M.	26	9. 7. 26. 31	9. 14. 38. 10	4. 55. 34	4. 46. 8
Tu.	27	9. 21. 52. 40	9. 29. 9. 11	4. 32. 3	4. 13. 29
W.	28	10. 6. 26. 49	10. 13. 44. 45	3. 50. 42	3. 24. 6
Th.	29	10. 21. 2. 10	10. 28. 18. 23	2. 54. 10	2. 21. 25
F.	30	11. 5. 32. 51	11. 12. 45. 5	1. 46. 29	1. 9. 59 S

Days of the Week.	Days of the Month.	THE MOON'S					
		Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	Midnight	Noon.	Midnight.
				D. M.	D. M.	D. M.	D. M.
Th.	1	22	16. 56	314. 12	321. 16	21. 13 S	18. 42 S
F.	2	23	17. 47	328. 8	334. 47	15. 55	12. 56
Sa.	3	24	18. 36	341. 16	347. 38	9. 48	6. 32 S
Sun.	4	25	19. 23	353. 54	0. 6	3. 12 S	0. 10 N
M.	5	26	20. 10	6. 17	12. 30	3. 31 N	6. 49
Tu.	6	27	20. 59	18. 46	25. 8	10. 1	13. 5
W.	7	28	21. 50	31. 38	38. 16	16. 0	18. 40
Th.	8	29	22. 44	45. 4	52. 1	21. 6	23. 14
F.	9	30	23. 40	59. 8	66. 22	25. 2	26. 28
Sa.	10	1	6	73. 42	81. 4	27. 32	28. 12
Sun.	11	2	0. 37	88. 26	95. 44	28. 28	28. 20
M.	12	3	1. 33	102. 54	109. 55	27. 50	26. 58
Tu.	13	4	2. 26	116. 44	123. 20	25. 46	24. 17
W.	14	5	3. 14	129. 42	135. 52	22. 32	20. 33
Th.	15	6	3. 59	141. 49	147. 34	18. 22	16. 2
F.	16	7	4. 41	153. 10	158. 37	13. 33	10. 58
Sa.	17	8	5. 21	163. 58	169. 15	8. 17	5. 32 N
Sun.	18	9	6. 0	174. 30	179. 44	2. 44 N	0. 7 S
M.	19	10	6. 39	185. 0	190. 20	2. 59 S	5. 50
Tu.	20	11	7. 20	195. 46	201. 21	8. 39	11. 25
W.	21	12	8. 4	207. 6	213. 3	14. 7	16. 42
Th.	22	13	8. 51	219. 15	225. 43	19. 8	21. 23
F.	23	14	9. 44	232. 29	239. 33	23. 26	25. 11
Sa.	24	15	10. 41	246. 54	254. 31	26. 37	27. 40
Sun.	25	16	11. 42	262. 21	270. 21	28. 18	28. 28
M.	26	17	12. 45	278. 25	286. 29	28. 10	27. 24
Tu.	27	18	13. 46	294. 27	302. 16	26. 10	24. 29
W.	28	19	14. 44	309. 53	317. 15	22. 24	19. 58
Th.	29	20	15. 37	324. 24	331. 19	17. 15	14. 17
F.	30	21	16. 27	338. 1	344. 33	11. 8	7. 51

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight	Noon.	Midnight		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
Th.	1	16. 11	16. 11	59. 16	59. 18	4824	4822
F.	2	16. 11	16. 11	59. 19	59. 18	4821	4822
Sa.	3	16. 11	16. 10	59. 16	59. 13	4823	4828
Sun.	4	16. 9	16. 7	59. 9	59. 4	4833	4839
M.	5	16. 5	16. 3	58. 58	58. 50	4846	4856
Tu.	6	16. 1	15. 58	58. 41	58. 31	4867	4881
W.	7	15. 55	15. 52	58. 20	58. 7	4893	4910
Th.	8	15. 48	15. 44	57. 55	57. 41	4924	4943
F.	9	15. 40	15. 36	57. 25	57. 9	4962	4983
Sa.	10	15. 32	15. 27	56. 52	56. 35	5003	5026
Sun.	11	15. 22	15. 17	56. 18	56. 1	5048	5069
M.	12	15. 12	15. 8	55. 44	55. 28	5091	5111
Tu.	13	15. 4	15. 0	55. 13	54. 59	5132	5150
W.	14	14. 57	14. 54	54. 47	54. 36	5166	5181
Th.	15	14. 52	14. 50	54. 27	54. 20	5191	5202
F.	16	14. 48	14. 48	54. 15	54. 12	5209	5213
Sa.	17	14. 48	14. 48	54. 12	54. 14	5213	5210
Sun.	18	14. 49	14. 51	54. 19	54. 27	5203	5193
M.	19	14. 54	14. 58	54. 37	54. 49	5179	5163
Tu.	20	15. 2	15. 6	55. 4	55. 21	5144	5122
W.	21	15. 11	15. 17	55. 40	56. 0	5097	5071
Th.	22	15. 23	15. 29	56. 22	56. 45	5042	5013
F.	23	15. 36	15. 43	57. 9	57. 33	4983	4952
Sa.	24	15. 49	15. 55	57. 56	58. 19	4923	4895
Sun.	25	16. 1	16. 6	58. 40	58. 59	4869	4845
M.	26	16. 11	16. 15	59. 16	59. 31	4823	4806
Tu.	27	16. 18	16. 20	59. 43	59. 52	4792	4781
W.	28	16. 22	16. 23	59. 58	60. 0	4773	4771
Th.	29	16. 23	16. 22	60. 0	59. 57	4771	4775
F.	30	16. 20	16. 18	59. 51	59. 43	4782	4792

Stars' Names.	Days	Noon.		IIIh.		VIh.		IXh.		Midnight.		XVh.		XVIIIh.		XXIh.	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	
Regulus.	18	26. 32. 48	28. 1. 44	29. 30. 46	30. 59. 57	32. 29. 14	33. 58. 40	35. 28. 15	36. 57. 59								
	19	38. 27. 52	39. 57. 56	41. 29. 11	42. 58. 37	44. 29. 14	46. 0. 3	47. 31. 6	49. 2. 22								
	20	50. 38. 52	52. 5. 36	53. 37. 35	55. 9. 49	56. 42. 19	58. 15. 6	59. 48. 10	61. 21. 31								
	21	62. 55. 9	64. 29. 5	66. 3. 20	67. 37. 54	69. 12. 46	70. 47. 58	72. 23. 30	73. 59. 23								
	22	75. 35. 36															
Spica μ .	22	21. 33. 21	23. 9. 58	24. 46. 56	26. 24. 15	28. 1. 55	29. 39. 56	31. 18. 19	32. 57. 5								
	23	34. 36. 12	36. 15. 41	37. 55. 32	39. 35. 45	41. 16. 20	42. 57. 16	44. 38. 35	46. 20. 14								
	24	48. 2. 15	49. 44. 38	51. 27. 21	53. 10. 25	54. 53. 50	56. 37. 35	58. 21. 40	60. 6. 5								
	25	61. 50. 48	63. 35. 50	65. 21. 11	67. 6. 49	68. 52. 44	70. 38. 56	72. 25. 24	74. 12. 8								
	26	75. 59. 7															
Antares.	26	30. 4. 43	31. 51. 56	33. 39. 23	35. 27. 2	37. 14. 55	39. 2. 59	40. 51. 13	42. 39. 37								
	27	44. 28. 12	46. 16. 56	48. 5. 47	49. 54. 45	51. 43. 50	53. 33. 1	55. 22. 16	57. 11. 35								
	28	59. 0. 58	60. 50. 24	62. 39. 51	64. 29. 40	66. 18. 50	68. 8. 19	69. 57. 46	71. 47. 12								
	29	73. 36. 36	75. 25. 57	77. 15. 13	79. 4. 26	80. 53. 35	82. 42. 38	84. 31. 35	86. 20. 26								
	30	88. 9. 10	89. 57. 46	91. 46. 15	94. 34. 35	95. 22. 47	97. 10. 50	98. 58. 43	100. 46. 27								
	J. 1	102. 34. 1															

CONFIGURATIONS OF THE SATELLITES OF JUPITER
at Three Quarters of an Hour past II o'Clock in the *Morning*.

1			1°	○	4°	·3	·2○
2		·2	4°	○	·1	3°	
3		4°	·1	○	3°	·2	
4		4°	3°	○	1°	2°	
5	4°	·3	2°	·1	○		
6	·4		·3	·2	○		1.●
7	·4			○	·1	·3	·2
8		·4	1°	○		·3	2.●
9		·2	·4	○	·1	3°	
10			1°	○	·4	2	3
11			3°	○	1°	2°	·4
12		3°	2°	·1	○		·4
13		·3	·2	○	1°	3	·4
14	·1○			○	·3	·2	·4
15			1°	○	·0	·3	·4
16		2°		○	·1	3°	4°
17	·2○		1°	○	3°	4°	
18			3°	○	1°	2°	4.●
19		3°	4°	1	○	2	
20		4°	·3	·2	○	1°	
21	4°		·1	○	·2		·3○
22	4°			○	2°	·3	1.●
23	·4		2°	○	·1	3°	
24	·4		1°	○	·3		·2○
25		·4	3°	○	·1	2°	
26		3°	1	○	4	2°	
27		·3	·2	○	1	○	4
28			1	○	3	·2	·4
29	1.●			○	2°	·2	·4
30	·1○		2°	○		3°	·4

Days of the Week.	Days of the Month.	<i>Sundays, Holidays, Terms, &c.</i>	<i>Phases of the MOON.</i>	
			D. H. M.	
			☾ <i>Last Quarter</i> - - -	2. 11. 37
			● <i>New Moon</i> - - - -	9. 19. 36
			☽ <i>First Quarter</i> - -	17. 23. 24
			○ <i>Full Moon</i> - - - -	25. 2. 53
			☾ <i>Last Quarter</i> - - -	31. 17. 49
			<i>Other Phenomena.</i>	
			D. H. M.	
			1. 5. 21 ☽ ♀.	
			7. 15. 5 ☽ β ♀.	
			9. - - ♀ Stationary.	
			10. 1. 7 ☽ Pollux.	
			12. - - ♀ Stationary.	
			14. 14. 39 ☽ δ.	
			17. 14. 50 ☽ α ♀.	
			21. 5. 45 ☽ α ♀.	
			22. 12. 36 ☽ enters Ω.	
			25. - - ♀ Stationary.	
			28. 12. 4 ☽ ♀.	
Sa.	1			
Sun.	2	5th Sund. after Trinity.		
M.	3	[Visitat. of B.V. Mary.		
Tu.	4	Oxf. Act. & Camb. Com.		
W.	5	[Tr. of St. Martin.		
Th.	6			
F.	7	Camb. Term ends.		
Sa.	8	Oxford Term ends.		
Sun.	9	6th Sund. after Trinity.		
M.	10			
Tu.	11			
W.	12			
Th.	13			
F.	14			
Sa.	15	Swithin.		
Sun.	16	7th Sund. after Trinity.		
M.	17			
Tu.	18			
W.	19			
Th.	20	Margaret.		
F.	21			
Sa.	22	Magdalen.		
Sun.	23	8th Sund. after Trinity.		
M.	24			
Tu.	25	St. James.		
W.	26	St. Anne.		
Th.	27			
F.	28			
Sa.	29			
Sun.	30	9th Sund. after Trinity.		
M.	31			

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Add to app. Time.</i>	Diff.
		Longitude.	Rt. Ascen. <i>in Time.</i>	Declin. <i>North.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Sa.	1	3. 9. 27. 48	6. 41. 11, 3	23. 7. 41	3. 24, 0	11, 4
Sun.	2	3. 10. 25. 0	6. 45. 19, 8	23. 3. 24	3. 35, 4	11, 2
M.	3	3. 11. 22. 12	6. 49. 27, 5	22. 58. 43	3. 46, 6	10, 9
Tu.	4	3. 12. 19. 24	6. 53. 35, 0	22. 53. 39	3. 57, 5	10, 6
W.	5	3. 13. 16. 37	6. 57. 42, 2	22. 48. 10	4. 8, 1	10, 3
Th.	6	3. 14. 13. 50	7. 1. 49, 1	22. 42. 18	4. 18, 4	9, 9
F.	7	3. 15. 11. 4	7. 5. 55, 7	22. 36. 2	4. 28, 3	9, 6
Sa.	8	3. 16. 8. 18	7. 10. 1, 8	22. 29. 22	4. 37, 9	9, 3
Sun.	9	3. 17. 5. 32	7. 14. 7, 6	22. 22. 19	4. 47, 2	8, 8
M.	10	3. 18. 2. 46	7. 18. 13, 0	22. 14. 53	4. 56, 0	8, 4
Tu.	11	3. 19. 0. 1	7. 22. 18, 1	22. 7. 4	5. 4, 4	7, 9
W.	12	3. 19. 57. 16	7. 26. 22, 5	21. 58. 51	5. 12, 3	7, 5
Th.	13	3. 20. 54. 31	7. 30. 26, 6	21. 50. 17	5. 19, 8	6, 9
F.	14	3. 21. 51. 46	7. 34. 30, 1	21. 41. 20	5. 26, 7	6, 5
Sa.	15	3. 22. 49. 2	7. 38. 33, 2	21. 32. 0	5. 33, 2	6, 0
Sun.	16	3. 23. 46. 17	7. 42. 35, 7	21. 22. 19	5. 39, 2	5, 4
M.	17	3. 24. 43. 33	7. 46. 37, 7	21. 12. 16	5. 44, 6	4, 9
Tu.	18	3. 25. 40. 49	7. 50. 39, 2	21. 1. 52	5. 49, 5	4, 4
W.	19	3. 26. 38. 5	7. 54. 40, 1	20. 51. 6	5. 53, 9	3, 8
Th.	20	3. 27. 35. 22	7. 58. 40, 5	20. 39. 59	5. 57, 7	3, 2
F.	21	3. 28. 32. 39	8. 2. 40, 2	20. 28. 31	6. 0, 9	2, 6
Sa.	22	3. 29. 29. 56	8. 6. 39, 4	20. 16. 43	6. 3, 5	2, 0
Sun.	23	4. 0. 27. 13	8. 10. 38, 0	20. 4. 34	6. 5, 5	1, 5
M.	24	4. 1. 24. 31	8. 14. 36, 0	19. 52. 5	6. 7, 0	0, 8
Tu.	25	4. 2. 21. 50	8. 18. 33, 5	19. 39. 17	6. 7, 8	0, 3
W.	26	4. 3. 19. 8	8. 22. 30, 3	19. 26. 9	6. 8, 1	0, 4
Th.	27	4. 4. 16. 28	8. 26. 26, 5	19. 12. 41	6. 7, 7	0, 9
F.	28	4. 5. 13. 49	8. 30. 22, 1	18. 58. 55	6. 6, 8	1, 5
Sa.	29	4. 6. 11. 11	8. 34. 17, 2	18. 44. 49	6. 5, 3	2, 0
Sun.	30	4. 7. 8. 35	8. 38. 11, 7	18. 30. 25	6. 3, 3	2, 7
M.	31	4. 8. 5. 59	8. 42. 5, 6	18. 15. 43	6. 0, 6	

Days	Time of ☉'s Semidiam. pass ^d . Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter.	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 8, 5	15. 45, 5	2. 23, 0	0. 00713	11. 26. 47
7	1. 8, 3	15. 45, 6	2. 23, 0	0. 00710	11. 26. 28
13	1. 8, 0	15. 45, 8	2. 23, 1	0. 00699	11. 26. 9
19	1. 7, 6	15. 46, 2	2. 23, 2	0. 00682	11. 25. 50
25	1. 7, 1	15. 46, 7	2. 23, 4	0. 00657	11. 25. 31

ECLIPSES OF THE SATELLITES OF JUPITER.					
MEAN TIME.					
I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	2. 29. 34	2	8. 53. 13	1	2. 21. 20 Im.
3	20. 57. 58	5	22. 12. 0	1	5. 39. 1 E.
5	15. 26. 25	9	11. 29. 59	8	6. 21. 56 Im.
7	9. 54. 50	13	0. 48. 39	8	9. 38. 53 E.
9	4. 23. 18	*16	14. 6. 38	15	10. 23. 11 Im.
10	22. 51. 43	20	3. 25. 12	*15	13. 39. 21 E.
12	17. 20. 13	23	16. 43. 11	*22	14. 24. 0 Im.
*14	11. 48. 38	27	6. 1. 42	22	17. 39. 25 E.
16	6. 17. 8	30	19. 19. 40	29	18. 24. 33 Im.
18	0. 45. 34			29	21. 39. 12 E.
19	19. 14. 4				
*21	13. 42. 31				
23	8. 11. 1				
25	2. 39. 30				
26	21. 8. 1				
28	15. 36. 30				
*30	10. 5. 3				
				IV. Satellite.	
				4	1. 20. 53 Im.
				4	5. 29. 7 E.
				20	19. 35. 48 Im.
				20	23. 38. 16 E.

THE PLANETS'								
Days.	Heliocentric		Geocentric		Declin.	Rt. Asc. in Time.	Passage	
	Long.	Lat.	Long.	Lat.			Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.			D. M.	H. M.
♿ MERCURY. Gr. Elong. 22 ^d .								
1	5. 21. 42	5. 42 N	3. 27. 7	1. 49 N	22. 33 N	7. 58	1. 17	
4	6. 3. 38	4. 45	4. 2. 18	1. 39	21. 16	8. 20	1. 26	
7	6. 14. 36	3. 41	4. 7. 10	1. 23	19. 50	8. 40	1. 34	
10	6. 24. 45	2. 34	4. 11. 43	1. 2	18. 17	8. 58	1. 40	
13	7. 4. 17	1. 27	4. 15. 57	0. 38	16. 40	9. 14	1. 44	
16	7. 13. 19	0. 21 N	4. 19. 51	0. 10 N	15. 2	9. 29	1. 47	
19	7. 22. 0	0. 43 S	4. 23. 24	0. 21 S	13. 24	9. 42	1. 48	
22	8. 0. 26	1. 44	4. 26. 33	0. 55	11. 49	9. 54	1. 47	
25	8. 8. 43	2. 42	4. 29. 15	1. 31	10. 20	10. 3	1. 45	
28	8. 16. 57	3. 36	5. 1. 29	2. 8	8. 58	10. 11	1. 40	
31	8. 25. 14	4. 25	5. 3. 7	2. 45	7. 48	10. 16	1. 34	
♀ VENUS. Inf. ♂ 30 ^d . 3 ^h 3 ^m .								
1	8. 21. 10	0. 22 S	4. 14. 23	0. 40 S	15. 54 N	9. 7	2. 25	
7	9. 0. 41	0. 55	4. 15. 25	1. 50	14. 28	9. 9	2. 3	
13	9. 10. 10	1. 27	4. 15. 7	3. 10	13. 17	9. 6	1. 36	
19	9. 19. 39	1. 56	4. 13. 23	4. 34	12. 26	8. 58	1. 3	
25	9. 29. 8	2. 22	4. 10. 26	5. 53	11. 59	8. 45	0. 26	
♂ MARS.								
1	6. 9. 32	1. 9 N	5. 7. 36	0. 59 N	9. 38 N	10. 39	3. 57	
7	6. 12. 16	1. 5	5. 11. 7	0. 54	8. 14	10. 52	3. 45	
13	6. 15. 1	1. 1	5. 14. 40	0. 49	6. 48	11. 5	3. 34	
19	6. 17. 47	0. 56	5. 18. 17	0. 45	5. 19	11. 18	3. 23	
25	6. 20. 35	0. 51	5. 21. 55	0. 40	3. 49	11. 31	3. 13	
♃ JUPITER.								
1	11. 11. 47	1. 11 S	11. 23. 4	1. 16 S	3. 55 S	23. 37	16. 53	
7	11. 12. 19	1. 11	11. 23. 14	1. 18	3. 53	23. 37	16. 29	
13	11. 12. 52	1. 11	11. 23. 17	1. 20	3. 54	23. 37	16. 4	
19	11. 13. 24	1. 12	11. 23. 13	1. 22	3. 57	23. 37	15. 40	
25	11. 13. 57	1. 12	11. 23. 2	1. 24	4. 3	23. 37	15. 15	
♄ SATURN. ☐ 4 ^d . 22 ^h 3 ^m .								
1	0. 6. 55	2. 25 S	0. 13. 5	2. 25 S	2. 57 N	0. 52	18. 8	
7	0. 7. 7	2. 25	0. 13. 18	2. 26	3. 2	0. 53	17. 44	
13	0. 7. 19	2. 25	0. 13. 27	2. 28	3. 5	0. 53	17. 20	
19	0. 7. 32	2. 25	0. 13. 33	2. 30	3. 7	0. 54	16. 56	
25	0. 7. 44	2. 25	0. 13. 34	2. 31	3. 8	0. 54	16. 32	
♅ GEORGIAN.								
1	8. 26. 58	0. 11 S	8. 26. 17	0. 12 S	23. 37 S	17. 44	11. 1	
11	8. 27. 5	0. 11	8. 25. 54	0. 12	23. 36	17. 42	10. 18	
21	8. 27. 12	0. 11	8. 25. 33	0. 12	23. 35	17. 41	9. 36	

Days of the Week.	Days of the Month.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Sa.	1	11. 19. 54. 44	11. 27. 1. 32	0. 32. 34 S	0. 5. 8 N
Sun.	2	0. 4. 5. 17	0. 11. 5. 54	0. 42. 30 N	1. 18. 57
M.	3	0. 18. 3. 23	0. 24. 57. 44	1. 53. 56	2. 26. 59
Tu.	4	1. 1. 48. 59	1. 8. 37. 13	2. 57. 39	3. 25. 31
W.	5	1. 15. 22. 26	1. 22. 4. 41	3. 50. 16	4. 11. 39
Th.	6	1. 28. 44. 0	2. 5. 20. 21	4. 29. 25	4. 43. 25
F.	7	2. 11. 53. 44	2. 18. 24. 6	4. 53. 33	4. 59. 48
Sa.	8	2. 24. 51. 24	3. 1. 15. 34	5. 2. 8	5. 0. 38
Sun.	9	3. 7. 36. 35	3. 13. 54. 26	4. 55. 24	4. 46. 36
M.	10	3. 20. 9. 6	3. 26. 20. 37	4. 34. 25	4. 19. 4
Tu.	11	4. 2. 29. 5	4. 8. 34. 36	4. 0. 48	3. 39. 52
W.	12	4. 14. 37. 22	4. 20. 37. 38	3. 16. 34	2. 51. 13
Th.	13	4. 26. 35. 42	5. 2. 31. 54	2. 24. 5	1. 55. 29
F.	14	5. 8. 26. 40	5. 14. 20. 28	1. 25. 42	0. 55. 2 N
Sa.	15	5. 20. 13. 48	5. 26. 7. 15	0. 23. 46 N	0. 7. 47 S
Sun.	16	6. 2. 1. 24	6. 7. 56. 53	0. 39. 21 S	1. 10. 38
M.	17	6. 13. 54. 20	6. 19. 54. 26	1. 41. 19	2. 11. 8
Tu.	18	6. 25. 57. 51	7. 2. 5. 14	2. 39. 45	3. 6. 50
W.	19	7. 8. 17. 14	7. 14. 34. 28	3. 32. 4	3. 55. 5
Th.	20	7. 20. 57. 28	7. 27. 26. 40	4. 15. 32	4. 33. 3
F.	21	8. 4. 2. 28	8. 10. 45. 7	4. 47. 15	4. 57. 46
Sa.	22	8. 17. 34. 42	8. 24. 31. 9	5. 4. 16	5. 6. 26
Sun.	23	9. 1. 34. 13	9. 8. 43. 20	5. 4. 1	4. 56. 51
M.	24	9. 15. 58. 21	9. 23. 18. 2	4. 44. 50	4. 28. 2
Tu.	25	10. 0. 41. 39	10. 8. 8. 9	4. 6. 36	3. 40. 50
W.	26	10. 15. 36. 28	10. 23. 5. 29	3. 11. 9	2. 38. 6
Th.	27	11. 0. 34. 8	11. 8. 1. 23	2. 2. 18	1. 24. 28
F.	28	11. 15. 26. 21	11. 22. 48. 14	0. 45. 21 S	0. 5. 42 S
Sa.	29	0. 0. 6. 25	0. 7. 20. 23	0. 33. 45 N	1. 12. 18 N
Sun.	30	0. 14. 29. 48	0. 21. 34. 26	1. 49. 19	2. 24. 15
M.	31	0. 28. 34. 11	1. 5. 29. 4	2. 56. 37	3. 26. 0

DISTANCES of Moon's Centre from SUN, and from STARS EAST of her.

Stars' Names.	Days.	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D. M. S.	P. M. S.	D. M. S.	P. M. S.	D. M. S.	P. M. S.	D. M. S.	P. M. S.	D. M. S.	P. M. S.	D. M. S.	P. M. S.	D. M. S.	P. M. S.	D. M. S.	P. M. S.
Aldebaran.	1	77. 22. 11	75. 36. 37	73. 51. 15	72. 6. 7	70. 21. 11	68. 36. 29	66. 52. 2	65. 7. 49								
	2	63. 23. 52	61. 40. 11	59. 56. 46	58. 13. 39	56. 30. 49											
The Sun.	1	100. 33. 1	107. 53. 13	106. 13. 36	104. 34. 8	102. 54. 52	101. 15. 47	99. 36. 53	97. 58. 11								
	2	93. 19. 41	94. 41. 23	93. 3. 17	91. 25. 23	89. 47. 42	88. 10. 13	86. 32. 57	84. 55. 53								
	3	83. 19. 2	81. 42. 24	80. 5. 59	78. 29. 47	76. 53. 48	75. 18. 2	73. 42. 29	72. 7. 9								
	4	70. 32. 2	68. 57. 8	67. 22. 28	65. 48. 0	64. 13. 46	62. 39. 45	61. 5. 57	59. 32. 22								
	5	57. 59. 1	56. 25. 53	54. 52. 58	53. 20. 17	51. 47. 49	50. 15. 35	48. 43. 33	47. 11. 45								
	6	45. 40. 11	44. 8. 51	42. 37. 46	41. 6. 55	39. 36. 18											
Spica η .	12	66. 53. 48	65. 23. 27	63. 53. 14	62. 23. 8	60. 53. 10	59. 23. 19	57. 53. 35	56. 23. 58								
	13	54. 54. 27	53. 25. 2	51. 55. 44	50. 26. 30	48. 57. 22	47. 28. 19	45. 59. 19	44. 30. 23								
	14	43. 1. 31	41. 32. 42	40. 3. 55	38. 35. 10	37. 6. 28	35. 37. 47	34. 9. 7	32. 40. 27								
	15	31. 11. 47	29. 43. 7	28. 14. 25	26. 45. 42	25. 16. 57											
Antares.	15	- - -	- - -	- - -	- - -	71. 11. 25	69. 42. 37	68. 13. 46	66. 44. 51								
	16	65. 15. 52	63. 46. 48	62. 17. 39	60. 48. 25	59. 19. 4	57. 49. 37	56. 20. 1	54. 50. 18								
	17	53. 20. 26	51. 50. 25	50. 20. 13	48. 49. 51	47. 19. 19	45. 48. 35	44. 17. 38	42. 46. 29								
	18	41. 15. 7	39. 43. 31	38. 11. 40	36. 39. 34	35. 7. 13	33. 34. 35	32. 1. 41	30. 28. 29								
α Aquilæ.	19	28. 55. 0	- - -	- - -	- - -	- - -	- - -	- - -	- - -								
	19	83. 53. 9	82. 35. 10	81. 17. 0	79. 58. 42	78. 40. 15	77. 21. 42	76. 3. 3	74. 44. 20								
	20	73. 25. 33	72. 6. 43	70. 47. 53	69. 29. 6	68. 10. 20	66. 51. 39	65. 33. 5	64. 14. 40								
	21	62. 56. 24	- - -	- - -	- - -	- - -	- - -	- - -	- - -								

Stars' Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Fomalhaut.	21	85.	45. 46	84. 11. 33		82. 36. 59		81. 2. 3		79. 26. 46		77. 51. 9		76. 15. 12		74. 38. 56	
	22	73.	2. 25	71. 25. 34		69. 48. 27		68. 11. 6		66. 33. 31		64. 55. 42		63. 17. 42		61. 39. 34	
	23	60.	1. 17	58. 22. 53		56. 44. 27		55. 6. 2		53. 27. 37		51. 49. 19		50. 11. 9		48. 33. 10	
	24	46.	55. 24	-	-	-	-	-	-	-	-	-	-	-	-	-	-
α Pegasi.	24	68.	19. 8	66. 37. 27		64. 55. 38		63. 13. 45		61. 31. 51		59. 49. 59		58. 8. 12		56. 26. 39	
	25	54.	45. 6	53. 3. 54		51. 22. 59		49. 42. 26		48. 2. 17		-	-	-	-	-	-
α Arietis.	25	-	-	-	-	-	-	-	-	87. 42. 22.		85. 51. 9		83. 59. 40		82. 8. 24	
	26	80.	10. 52	78. 25. 17		76. 33. 39		74. 42. 0		72. 50. 20		70. 58. 41		69. 7. 4		67. 15. 30	
	27	65.	24. 0	63. 32. 36		61. 41. 18		59. 50. 9		57. 59. 9		56. 8. 19		54. 17. 40		52. 27. 14	
	28	50.	37. 0	48. 47. 1		46. 57. 19		45. 7. 55		43. 18. 48		41. 30. 1		39. 41. 35		37. 53. 34	
Aldebaran.	29	36.	5. 57	34. 18. 47		32. 32. 6		30. 45. 57		29. 0. 18		-	-	-	-	-	-
	29	-	-	-	-	-	-	-	-	60. 13. 51		58. 28. 6		56. 42. 44		54. 57. 46	
	30	53.	13. 13	51. 29. 7		49. 45. 28		48. 2. 17		46. 19. 37		44. 37. 26		42. 55. 48		41. 14. 44	
	31	39.	34. 16	37. 54. 23		36. 15. 10		34. 36. 43		32. 59. 3		31. 22. 14		29. 46. 20		28. 11. 23	
The Sun.	A. 1	26.	37. 27	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	29	-	-	-	-	-	-	121. 0. 3		119. 19. 4		117. 38. 23		115. 57. 58		114. 17. 52	
	30	112.	38. 4	110. 58. 34		109. 19. 24		107. 40. 32		106. 1. 59		104. 23. 46		102. 45. 52		101. 8. 17	
	31	90.	31. 2	97. 54. 6		96. 17. 31		94. 41. 14		93. 5. 17		91. 29. 36		89. 54. 21		88. 19. 22	
	A. 1	86.	44. 42	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CONFIGURATIONS of the SATELLITES of JUPITER,
at *Midnight*.

1	3. ●		○	·1	·2	4*
2		3*	1*	○		4* 2. ●
3		3*	·2	○	·1	4*
4	1. ●		1 6 3	○	·2	
5				○	1* ·3	2*
6		4*	2* 1	○		·3
7		4*	·2	○		3* 1. ●
8		4*		○	·1	2* 3. ●
9		·4	3* 1*	○	2*	
10		·4	·3 2*	○	·1	
11			·4 ·3 ·1	○	·2	
12			·4	○	1 6 3	2*
13			2* 1	○	·4	3*
14			·2	○	1*	3* ·4
15	·1 ○			○	3*	·2 3* ·4
16		3*	1*	○	2*	·4
17		·3	2*	○	1*	4*
18	·2 ○	·3	1*	○		4*
19				○	·3	1* 2* 4*
20			·1 2*	○	4*	·3
21		·2	4*	○	1*	3*
22	·1 ○	4*		○	3* 2	
23		4*	3*	○	2*	1. ●
24		4*	3* 2*	○	·1	
25	·4		·3 1* ·2	○		
26	·4			○	·1 2*	·3 ○
27		·4	·1 2*	○		·3
28			·4 ·2	○	1*	3*
29	·4 ○		·1	○	3* ·2	
30			3*	○	2* ·4	1. ●
31		3*	2*	○	·1	·4

Days of the Week.	Days of the Month.	<i>Sundays, Holidays, Terms, &c.</i>	<i>Phases of the MOON.</i>
			<p style="text-align: right;">D. H. M.</p> <p>● New Moon - - - 8. 9. 41</p> <p>☾ First Quarter - - 16. 13. 53</p> <p>○ Full Moon - - - 23. 10. 30</p> <p>☾ Last Quarter - - 30. 2. 38</p>
Tu.	1	Lammas Day.	<p style="text-align: center;"><i>Other Phenomena.</i></p> <p>D. H. M.</p> <p>3. 20. 45 ☾ β γ.</p> <p>5. - - ☿ Stationary.</p> <p>9. 8. 9 ☾ α Ω.</p> <p>12. 9. 28 ☾ δ.</p> <p>13. 21. 52 ☾ α ♀.</p> <p>17. 14. 38 ☾ α ♀.</p> <p>22. 19. 7 ☉ enters ♀.</p> <p>24. 17. 54 ☾ ♀.</p> <p>29. - - ☿ Stationary.</p> <p>31. 2. 33 ☾ β γ.</p>
W.	2		
Th.	3		
F.	4		
Sa.	5		
Sun.	6	10th Su. aft. Trin. Trisfig.	
M.	7	N. of Jesus. [of our Lord.	
Tu.	8		
W.	9		
Th.	10	St. Lawrence.	
F.	11		
Sa.	12	Prince of Wales b. 1762.	
Sun.	13	11th Sund. after Trinity.	
M.	14		
Tu.	15	Assumption.	
W.	16	Duke of York born.	
Th.	17		
F.	18		
Sa.	19		
Sun.	20	12th Sund. after Trinity.	
M.	21	Duke of Clarence born.	
Tu.	22		
W.	23		
Th.	24	St. Bartholomew.	
F.	25		
Sa.	26		
Sun.	27	13th Sund. after Trinity.	
M.	28	St. Augustine.	
Tu.	29	St. John Bapt. beheaded.	
W.	30		
Th.	31		

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Add to app. Time.</i>	Diff.
		Longitude.	Rt. Ascen. <i>in Time.</i>	Declin. North.		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Tu.	1	4. 9. 3.24	8.45.58,9	18. 0.43	5.57,4	3,8
W.	2	4.10. 0.51	8.49.51,6	17.45.25	5.53,6	4,4
Th.	3	4.10.58.20	8.53.43,8	17.29.49	5.49,2	5,0
F.	4	4.11.55.49	8.57.35,4	17.13.57	5.44,2	5,5
Sa.	5	4.12.53.20	9. 1.26,4	16.57.47	5.38,7	6,2
Sun.	6	4.13.50.52	9. 5.16,8	16.41.21	5.32,5	6,7
M.	7	4.14.48.25	9. 9. 6,6	16.24.38	5.25,8	7,3
Tu.	8	4.15.46. 0	9.12.55,8	16. 7.40	5.18,5	7,9
W.	9	4.16.43.35	9.16.41,5	15.50.26	5.10,6	8,4
Th.	10	4.17.41.12	9.20.32,6	15.32.57	5. 2,2	9,0
F.	11	4.18.38.50	9.24.20,1	15.15.13	4.53,2	9,6
Sa.	12	4.19.36.29	9.28. 7,0	14.57.14	4.43,6	10,1
Sun.	13	4.20.34. 9	9.31.53,4	14.39. 1	4.33,5	10,8
M.	14	4.21.31.50	9.35.39,2	14.20.34	4.22,7	11,2
Tu.	15	4.22.29.32	9.39.24,5	14. 1.54	4.11,5	11,9
W.	16	4.23.27.15	9.43. 9,2	13.42.59	3.59,6	12,4
Th.	17	4.24.24.59	9.46.53,3	13.23.52	3.47,2	12,8
F.	18	4.25.22.44	9.50.36,9	13. 4.33	3.34,4	13,4
Sa.	19	4.26.20.30	9.54.20,0	12.45. 1	3.21,0	13,9
Sun.	20	4.27.18.18	9.58. 2,6	12.25.17	3. 7,1	14,4
M.	21	4.28.16. 5	10. 1.44,6	12. 5.21	2.52,7	14,9
Tu.	22	4.29.13.56	10. 5.26,5	11.45.14	2.37,8	15,3
W.	23	5. 0.11.47	10. 9. 7,6	11.24.55	2.22,5	15,7
Th.	24	5. 1. 9.40	10.12.48,3	11. 4.26	2. 6,8	16,3
F.	25	5. 2. 7.34	10.16.28,7	10.43.46	1.50,5	16,6
Sa.	26	5. 3. 5.29	10.20. 8,6	10.22.56	1.33,9	16,9
Sun.	27	5. 4. 3.27	10.23.48,2	10. 1.57	1.17,0	17,3
M.	28	5. 5. 1.26	10.27.27,4	9.40.47	0.59,7	17,6
Tu.	29	5. 5.59.27	10.31. 6,3	9.19.28	0.42,1	18,0
W.	30	5. 6.57.31	10.34.44,8	8.57.59	0.24,1	18,3
Th.	31	5. 7.55.36	10.38.23,0	8.36.22	0. 5,8	

Days	Time of \odot 's Semidiam. pass ^g . Merid.	THE SUN'S			Place of the \odot 's Node.
	M. S.	Semidia- meter. M. S.	Hourly Motion. M. S.	Logar. Distapce.	S. D. M.
1	1. 6, 5	15. 47, 6	2. 23, 6	0. 00619	11. 25. 9
7	1. 6, 0	15. 48, 4	2. 23, 9	0. 00579	11. 24. 50
13	1. 5, 5	15. 49, 4	2. 24, 2	0. 00534	11. 24. 31
19	1. 5, 0	15. 50, 5	2. 24, 5	0. 00483	11. 24. 12
25	1. 4, 6	15. 51, 8	2. 24, 9	0. 00426	11. 23. 53

ECLIPSES OF THE SATELLITES OF JUPITER.
MEAN TIME.

I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	4. 33. 32	3	8. 38. 5	5	22. 25. 0 Im.
2	23. 2. 6	6	21. 56. 2	6	1. 38. 55 E.
4	17. 30. 36	*10	11. 14. 26	13	2. 25. 44 Im.
*6	11. 59. 11	14	0. 32. 22	13	5. 38. 52 E.
8	6. 27. 42	*17	13. 50. 41	20	6. 27. 20 Im.
10	0. 56. 18	21	3. 8. 38	20	9. 39. 40 E.
11	19. 24. 51	24	16. 26. 52	*27	10. 28. 51 Im.
*13	13. 53. 27	28	5. 44. 51	*27	13. 40. 18 E.
15	8. 22. 1	31	19. 3. 1		
17	2. 50. 38				
18	21. 19. 13				
*20	15. 47. 52				
*22	10. 16. 28				
24	4. 45. 8				
25	23. 13. 44				
27	17. 42. 26				
*29	12. 11. 3				
31	6. 39. 46				
				IV. Satellite.	
				*6	13. 52. 3 Im.
				6	17. 48. 23 E.
				23	8. 8. 41 Im.
				*23	11. 58. 21 E.

Days	THE PLANETS'							
	Heliocentric		Geocentric		Declin.	Rt. Asc.		Passage
	Long.	Lat.	Long.	Lat.		in Time	Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	H. M.	
♿ MERCURY. Inf. ♂ 19 ^d . 9 ^h .								
1	8. 28. 1	4. 41 S	5. 3. 32	2. 57 S	7. 28 N	10. 18	1. 31	
4	9. 6. 30	5. 24	5. 4. 18	3. 33	6. 37	10. 19	1. 22	
7	9. 15. 14	6. 1	5. 4. 18	4. 4	6. 9	10. 19	1. 9	
10	9. 24. 21	6. 30	5. 3. 31	4. 29	6. 2	10. 15	0. 54	
13	10. 3. 58	6. 51	5. 1. 56	4. 43	6. 23	10. 9	0. 37	
16	10. 14. 11	7. 0	4. 29. 41	4. 44	7. 10	10. 0	0. 17	
19	10. 25. 11	6. 55	4. 27. 5	4. 27	8. 19	9. 51	23. 50	
22	11. 7. 7	6. 33	4. 24. 33	3. 54	9. 40	9. 42	23. 31	
25	11. 20. 9	5. 49	4. 22. 34	3. 8	11. 3	9. 36	23. 15	
28	0. 4. 26	4. 41	4. 21. 32	2. 13	12. 14	9. 33	23. 2	
31	0. 20. 4	3. 6	4. 21. 42	1. 17	13. 4	9. 35	22. 55	
♀ VENUS.								
1	10. 10. 12	2. 47 S	4. 6. 9	7. 1 S	11. 56 N	8. 27	23. 35	
7	10. 19. 42	3. 4	4. 2. 42	7. 31	12. 15	8. 13	22. 58	
13	10. 29. 12	3. 16	4. 0. 12	7. 32	12. 46	8. 3	22. 27	
19	11. 8. 42	3. 22	3. 29. 5	7. 11	13. 20	7. 59	22. 1	
25	11. 18. 13	3. 23	3. 29. 22	6. 35	13. 51	8. 0	21. 41	
♂ MARS.								
1	6. 23. 51	0. 46 N	5. 26. 14	0. 34 N	2. 2 N	11. 47	3. 1	
7	6. 26. 42	0. 41	5. 29. 58	0. 30	0. 29 N	12. 1	2. 51	
13	6. 29. 33	0. 35	6. 3. 45	0. 26	1. 6 S	12. 14	2. 42	
19	7. 2. 26	0. 30	6. 7. 34	0. 22	2. 40	12. 28	2. 34	
25	7. 5. 20	0. 25	6. 11. 25	0. 17	4. 15	12. 42	2. 26	
♃ JUPITER.								
1	11. 14. 35	1. 12 S	11. 22. 40	1. 26 S	4. 13 S	23. 35	14. 47	
7	11. 15. 8	1. 12	11. 22. 14	1. 27	4. 25	23. 34	14. 22	
13	11. 15. 41	1. 13	11. 21. 43	1. 29	4. 39	23. 32	13. 58	
19	11. 16. 13	1. 13	11. 21. 7	1. 30	4. 54	23. 30	13. 33	
25	11. 16. 46	1. 13	11. 20. 26	1. 31	5. 12	23. 27	13. 8	
♄ SATURN.								
1	0. 7. 58	2. 25 S	0. 13. 32	2. 33 S	3. 0 N	0. 54	16. 5	
7	0. 8. 11	2. 25	0. 13. 26	2. 35	2. 56	0. 53	15. 42	
13	0. 8. 23	2. 26	0. 13. 17	2. 36	2. 51	0. 53	15. 19	
19	0. 8. 35	2. 26	0. 13. 4	2. 38	2. 44	0. 52	14. 55	
25	0. 8. 47	2. 26	0. 12. 47	2. 39	2. 36	0. 51	14. 32	
♅ GEORGIAN.								
1	8. 27. 20	0. 11 S	8. 25. 15	0. 12 S	23. 35 S	17. 39	8. 52	
11	8. 27. 27	0. 12	8. 25. 1	0. 12	23. 34	17. 38	8. 13	
21	8. 27. 34	0. 12	8. 24. 53	0. 12	23. 34	17. 38	7. 35	

Days of the Week.	Days of the Month.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Tu.	1	1. 12. 19. 9	1. 19. 4. 32	3. 52. 4 N	4. 14. 35 N
W.	2	1. 25. 45. 24	2. 2. 22. 1	4. 33. 21	4. 48. 16
Th.	3	2. 8. 54. 33	2. 15. 23. 11	4. 59. 15	5. 6. 17
F.	4	2. 21. 48. 10	2. 28. 9. 40	5. 9. 23	5. 8. 37
Sa.	5	3. 4. 27. 55	3. 10. 43. 7	5. 4. 6	4. 55. 59
Sun.	6	3. 16. 55. 23	3. 23. 4. 55	4. 44. 25	4. 29. 36
M.	7	3. 29. 11. 51	4. 5. 16. 21	4. 11. 47	3. 51. 12
Tu.	8	4. 11. 18. 37	4. 17. 18. 48	3. 28. 8	3. 2. 50
W.	9	4. 23. 17. 8	4. 29. 13. 49	2. 35. 38	2. 6. 49
Th.	10	5. 5. 9. 7	5. 11. 3. 19	1. 36. 42	1. 5. 35
F.	11	5. 16. 56. 45	5. 22. 49. 46	0. 33. 48 N	0. 1. 39 N
Sa.	12	5. 28. 42. 46	6. 4. 36. 11	0. 30. 32 S	1. 2. 28 S
Sun.	13	6. 10. 30. 30	6. 16. 26. 12	1. 33. 49	2. 4. 19
M.	14	6. 22. 23. 51	6. 28. 23. 59	2. 33. 39	3. 1. 29
Tu.	15	7. 4. 27. 13	7. 10. 34. 6	3. 27. 33	3. 51. 31
W.	16	7. 16. 45. 15	7. 23. 1. 15	4. 13. 5	4. 31. 54
Th.	17	7. 29. 22. 37	8. 5. 49. 54	4. 47. 41	5. 0. 6
F.	18	8. 12. 23. 31	8. 19. 3. 51	5. 8. 50	5. 13. 33
Sa.	19	8. 25. 51. 10	9. 2. 45. 33	5. 14. 0	5. 9. 58
Sun.	20	9. 9. 46. 59	9. 16. 55. 15	5. 1. 16	4. 47. 47
M.	21	9. 24. 9. 58	10. 1. 30. 34	4. 29. 31	4. 6. 36
Tu.	22	10. 8. 56. 16	10. 16. 26. 7	3. 39. 16	3. 7. 54
W.	23	10. 23. 59. 6	11. 1. 34. 3	2. 33. 1	1. 55. 16
Th.	24	11. 9. 9. 45	11. 16. 44. 58	1. 15. 23 S	0. 34. 9 S
F.	25	11. 24. 18. 33	0. 1. 49. 24	0. 7. 33 N	0. 48. 53 N
Sa.	26	0. 9. 16. 34	0. 16. 39. 15	1. 29. 4	2. 7. 22
Sun.	27	0. 23. 56. 45	1. 1. 8. 35	2. 43. 8	3. 15. 50
M.	28	1. 8. 14. 26	1. 15. 14. 8	3. 45. 4	4. 10. 29
Tu.	29	1. 22. 7. 37	1. 28. 55. 0	4. 31. 52	4. 49. 6
W.	30	2. 5. 36. 26	2. 12. 12. 11	5. 2. 8	5. 10. 59
Th.	31	2. 18. 42. 32	2. 25. 7. 53	5. 15. 42	5. 16. 22

Days of the Week.	Days of the Month.	THE MOON'S					
		Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	Midnight	Noon.	Midnight.
		D.	H. M.	D. M.	D. M.	D. M.	D. M.
Tu.	1	23	18. 27	38. 37	45. 22	19. 14 N	21. 35 N
W.	2	24	19. 21	52. 15	59. 15	23. 38	25. 22
Th.	3	25	20. 17	66. 20	73. 30	26. 44	27. 44
F.	4	26	21. 13	80. 43	87. 55	28. 21	28. 35
Sa.	5	27	22. 7	95. 4	102. 7	28. 27	27. 57
Sun.	6	28	22. 58	109. 1	115. 45	27. 6	25. 55
M.	7	29	23. 46	122. 18	128. 39	24. 26	22. 42
Tu.	8	1	6	134. 48	140. 45	20. 44	18. 33
W.	9	2	0. 30	146. 31	152. 8	16. 12	13. 43
Th.	10	3	1. 12	157. 35	162. 57	11. 8	8. 27
F.	11	4	1. 51	168. 13	173. 26	5. 41	2. 53 N
Sa.	12	5	2. 30	178. 37	183. 49	0. 3 N	2. 47 S
Sun.	13	6	3. 9	189. 2	194. 20	5. 36 S	8. 23
M.	14	7	3. 50	199. 44	205. 16	11. 6	13. 44
Tu.	15	8	4. 33	210. 58	216. 52	16. 16	18. 40
W.	16	9	5. 20	223. 0	229. 23	20. 54	22. 56
Th.	17	10	6. 11	236. 2	242. 57	24. 43	26. 13
F.	18	11	7. 7	250. 9	257. 37	27. 24	28. 13
Sa.	19	12	8. 7	265. 18	273. 8	28. 38	28. 36
Sun.	20	13	9. 9	281. 4	289. 1	28. 7	27. 9
M.	21	14	10. 11	296. 56	304. 45	25. 43	23. 51
Tu.	22	15	11. 10	312. 25	319. 54	21. 34	18. 55
W.	23	16	12. 6	327. 11	334. 17	15. 57	12. 43
Th.	24	17	12. 59	341. 14	348. 2	9. 18	5. 45 S
F.	25	18	13. 51	354. 44	1. 21	2. 9 S	1. 28 N
Sa.	26	19	14. 42	7. 56	14. 31	5. 3 N	8. 31
Sun.	27	20	15. 33	21. 8	27. 49	11. 50	14. 57
M.	28	21	16. 26	34. 36	41. 29	17. 49	20. 25
Tu.	29	22	17. 21	48. 27	55. 32	22. 42	24. 38
W.	30	23	18. 18	62. 42	69. 57	26. 13	27. 25
Th.	31	24	19. 13	77. 13	84. 29	28. 14	28. 39

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight	Noon.	Midnight		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
Tu.	1	15. 51	15. 45	58. 4	57. 42	4913	4941
W.	2	15. 39	15. 34	57. 21	57. 1	4907	4902
Th.	3	15. 29	15. 23	56. 42	56. 23	5017	5041
F.	4	15. 18	15. 14	56. 5	55. 48	5064	5085
Sa.	5	15. 10	15. 6	55. 33	55. 19	5106	5124
Sun.	6	15. 2	14. 59	55. 6	54. 54	5141	5157
M.	7	14. 56	14. 53	54. 43	54. 33	5171	5185
Tu.	8	14. 51	14. 49	54. 24	54. 16	5197	5206
W.	9	14. 47	14. 46	54. 10	54. 5	5215	5222
Th.	10	14. 45	14. 44	54. 1	53. 59	5226	5230
F.	11	14. 44	14. 44	53. 58	53. 59	5231	5230
Sa.	12	14. 45	14. 46	54. 1	54. 5	5229	5221
Sun.	13	14. 48	14. 50	54. 12	54. 21	5213	5201
M.	14	14. 53	14. 56	54. 31	54. 43	5187	5170
Tu.	15	15. 0	15. 5	54. 58	55. 16	5152	5128
W.	16	15. 10	15. 16	55. 36	55. 58	5102	5075
Th.	17	15. 23	15. 30	56. 21	56. 46	5044	5012
F.	18	15. 37	15. 45	57. 13	57. 41	4977	4942
Sa.	19	15. 53	16. 0	58. 10	58. 39	4906	4870
Sun.	20	16. 8	16. 16	59. 7	59. 34	4835	4802
M.	21	16. 23	16. 29	60. 0	60. 23	4771	4743
Tu.	22	16. 34	16. 38	60. 42	60. 58	4721	4702
W.	23	16. 41	16. 43	61. 9	61. 16	4689	4680
Th.	24	16. 44	16. 43	61. 18	61. 15	4677	4682
F.	25	16. 41	16. 38	61. 7	60. 56	4691	4704
Sa.	26	16. 33	16. 28	60. 40	60. 20	4723	4747
Sun.	27	16. 22	16. 15	59. 58	59. 34	4773	4802
M.	28	16. 8	16. 1	59. 8	58. 42	4834	4866
Tu.	29	15. 54	15. 44	58. 15	57. 48	4901	4933
W.	30	15. 39	15. 33	57. 22	56. 57	4967	4998
Th.	31	15. 26	15. 20	56. 33	56. 11	5028	5056

DISTANCES of Moon's Centre from SUN, and from STARS *EAST* of her.

Stars' Names.	Days	Noon.		III ^b .		VI ^b .		IX ^b .		Midnight.		XV ^b .		XVIII ^b .		XXI ^b .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	
The Sun.	1	86.44.42	85.10.21	83.36.19	82.2.36	80.29.11	78.56.4	77.23.16	75.50.45								
	2	74.18.31	72.46.34	71.14.54	69.43.31	68.12.25	66.41.35	65.11.1	63.40.43								
	3	62.10.41	60.40.54	59.11.22	57.42.5	56.13.3	54.44.15	53.15.41	51.47.21								
	4	50.19.15	48.51.23	47.23.44	45.56.18	44.29.5	43.2.5	41.35.18	40.8.42								
Antares.	11	-	-	-	-	74.23.57	73.0.21	71.31.44	70.3.7								
	12	68.34.30	67.5.52	65.37.10	64.8.27	62.39.42	61.10.53	59.42.1	58.13.6								
	13	56.44.6	55.15.2	53.45.52	52.16.38	50.47.18	49.17.51	47.48.17	46.18.35								
	14	44.48.46	43.18.49	41.48.42	40.18.26	38.48.1	37.17.25	35.46.37	34.15.38								
	15	32.44.28	31.13.5	29.41.29	28.9.39	26.37.36	-	-	-								
α Aquilæ.	15	-	-	-	-	82.4.51	80.48.16	79.31.35	78.14.49								
	16	76.57.59	75.41.7	74.24.13	73.7.18	71.50.25	70.33.32	69.16.43	67.59.59								
Fomalhaut.	17	66.43.22	65.26.53	64.10.34	62.54.26	61.38.31	-	-	-								
	17	-	-	-	-	84.1.16	82.29.15	80.56.55	79.24.14								
	18	77.51.14	76.17.55	74.44.17	73.10.21	71.36.8	70.1.37	68.26.49	66.51.46								
	19	65.16.28	63.40.54	62.5.9	60.29.14	58.53.8	57.16.52	55.40.31	54.4.7								
	20	52.27.42	50.51.20	49.15.1	47.38.50	46.2.48	-	-	-								
α Pegasi.	20	-	-	-	-	67.28.19	65.47.58	64.7.23	62.26.37								
	21	60.45.44	59.4.46	57.23.48	55.42.50	54.1.58	52.21.9	50.40.33	49.0.14								
	22	47.20.17	45.40.47	44.1.50	42.23.29	40.45.49	-	-	-								

Stars' Names.	Days	Noon.		III ^b .		VI ^b .		IX ^b .		Midnight.		XV ^b .		XVIII ^b .		XXI ^b .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
α Arietis.	22	-	-	-	-	-	-	-	-	79. 27. 46	77. 35. 22	75. 42. 45	73. 49. 59				
	23	71. 57. 2		70. 3. 57	68. 10. 47	66. 17. 31		63. 17. 31		64. 24. 11	62. 30. 48	60. 37. 25	58. 44. 3				
	24	56. 50. 42		54. 57. 24	53. 4. 12	51. 11. 8		49. 18. 10		49. 18. 10	47. 25. 22	45. 32. 46	43. 40. 25				
	25	41. 48. 18		39. 56. 29	38. 4. 59	36. 13. 51		34. 23. 6		34. 23. 6	-	-	-				
Aldebaran.	26	-	-	-	-	-	-	-	-	65. 40. 0	63. 49. 43	61. 59. 46	60. 10. 9				
	27	58. 20. 54		56. 32. 3	54. 43. 37	52. 55. 39		51. 8. 8		51. 8. 8	49. 21. 7	47. 34. 36	45. 48. 42				
	28	44. 3. 20		42. 18. 34	40. 34. 28	38. 51. 0		37. 8. 27		37. 8. 27	35. 26. 37	33. 45. 38	32. 5. 33				
	29	30. 26. 24		-	-	-	-	-	-	-	-	-	-				
Pollux.	28	72. 12. 1		70. 26. 36	68. 41. 86	66. 57. 1		65. 12. 51		65. 12. 51	63. 29. 6	61. 45. 46	60. 2. 51				
	29	58. 20. 20		56. 38. 14	54. 56. 32	53. 15. 11		51. 34. 19		51. 34. 19	49. 53. 48	48. 13. 41	46. 33. 56				
	30	44. 54. 35		43. 15. 36	41. 36. 59	39. 58. 43		38. 20. 51		38. 20. 51	-	-	-				
	27	-	-	-	-	-	-	-	-	-	-	-	-				
The Sun.	28	116. 43. 17		115. 5. 5	113. 27. 17	111. 49. 54		110. 12. 56		110. 12. 56	108. 36. 23	107. 0. 15	106. 24. 31				
	29	103. 49. 11		102. 14. 16	100. 39. 44	99. 5. 36		97. 31. 52		97. 31. 52	95. 58. 31	94. 25. 33	92. 52. 58				
	30	91. 20. 46		89. 48. 56	88. 17. 27	86. 46. 19		85. 15. 33		85. 15. 33	83. 45. 8	82. 15. 2	80. 45. 17				
	31	79. 15. 50		77. 46. 43	76. 17. 53	74. 49. 22		73. 21. 9		73. 21. 9	71. 53. 13	70. 25. 33	68. 53. 10				
	S.1	67. 31. 3		-	-	-		-		-	-	-	-				

DISTANCES of MOON'S Centre from SUN, and from STARS WEST of her.										
Stars' Names.	Days	Noon.		III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.							
α Pegasi.	1	52. 22. 46	53. 55. 10		55. 27. 36	57. 0. 5	58. 32. 36	60. 5. 7	61. 37. 36	63. 10. 4
	2	64. 42. 28	66. 14. 48		67. 47. 1	69. 19. 8	70. 51. 9	72. 23. 2	73. 54. 47	75. 26. 22
	3	76. 57. 48	-		-	-	-	-	-	-
α Arietis.	3	33. 48. 55	35. 24. 7		36. 59. 13	38. 34. 12	40. 9. 4	41. 43. 48	43. 18. 25	44. 52. 52
	4	46. 27. 12	48. 1. 21		49. 35. 21	51. 9. 12	52. 42. 53	54. 16. 25	55. 49. 47	57. 23. 1
	5	58. 56. 5	60. 29. 0		62. 1. 46	63. 34. 22	65. 6. 50	-	-	-
	12	39. 6. 27	40. 27. 38		41. 48. 51	43. 10. 7	44. 31. 27	45. 52. 50	47. 14. 18	48. 35. 50
	13	49. 57. 26	51. 19. 7		52. 40. 54	54. 2. 47	55. 24. 46	56. 46. 52	58. 9. 5	59. 31. 27
The Sun.	14	60. 53. 56	62. 16. 34		63. 39. 21	65. 2. 18	66. 25. 24	67. 48. 41	69. 12. 10	70. 35. 51
	15	71. 59. 43	73. 23. 48		74. 48. 7	76. 12. 40	77. 37. 26	79. 2. 27	80. 27. 44	81. 53. 17
	16	83. 19. 6	84. 45. 12		86. 11. 36	87. 38. 18	89. 5. 18	90. 32. 37	92. 0. 16	93. 28. 15
	17	94. 56. 35	96. 25. 16		97. 54. 19	99. 23. 44	100. 53. 31	102. 23. 41	103. 54. 14	105. 25. 12
	18	106. 56. 33	108. 28. 19		110. 0. 30	111. 33. 6	113. 6. 7	114. 39. 35	116. 13. 28	117. 47. 48
	19	119. 22. 34	120. 57. 46		-	-	-	-	-	-
	20	-	-		-	-	-	-	-	-
Spica m.	16	-	-		-	-	31. 43. 39	33. 18. 14	34. 53. 10	36. 28. 26
	17	38. 4. 3	39. 40. 1		41. 16. 20	42. 53. 2	44. 30. 6	46. 7. 33	47. 45. 23	49. 23. 37
	18	51. 2. 15	52. 41. 18		54. 20. 46	56. 0. 39	57. 40. 57	59. 21. 42	61. 2. 53	62. 44. 30
	19	64. 26. 33	66. 9. 3		67. 52. 0	69. 35. 23	71. 14. 14	73. 3. 31	74. 48. 15	76. 33. 27
	20	78. 19. 5	-		-	-	-	-	-	-

[illegible]

CONFIGURATIONS OF THE SATELLITES OF JUPITER
at X o'Clock in the *Evening*.

1		.3	.2	1.	○		.4
2			.3	○	1.	.2	.4
3	2.●		1.	○		.3	.4
4			.2	○	1.	3.	4.
5			.1	○	.2	3.	4.
6			3.	○	1 6 4	2.	
7	.1○		3.	2 6 4	○		
8	1.●		4. 3.	.2	○		
9		4.		.3	○	.1	.2
10		4.		1.	○	2.	.3
11		.4		2.	○	.1	.3
12		.4		.1	○	3.	.2○
13		.4		3.	○	1.	2.
14			3.	.4 2. 1.	○		
15			.3	.2	○	.4	1.●
16			.3	○	.1	.2	.4
17				1.	○	2. 3.	.2
18				2.	○	.1	.3
19	.2○			.1	○	3.	.4
20	3.●				○	1. 2.	.4
21			3.	1 6 2	○		.4
22			.3	.2	○	1.	.4
23	4.●		.3	○		.2	.1○
24			4.	1.	○	2 6 3	
25		4.		2.	○	.1	.3
26		4.		1.	.2	○	3.
27	4.				○	3. 1.	.2
28	.4		3.	.1	○	2.	
29		.4	.3	.2	○	1.	
30	.1○		.4	.3	○	.2	
31				.4	1.	.3	2.

Days of the Week.	Days of the Month.	<i>Sundays, Holidays, Terms, &c.</i>	<i>Phases of the MOON.</i>
			D. H. M. ● New Moon - - - 7. 1. 52 ☾ First Quarter - - 15. 2. 19 ○ Full Moon - - - 21. 18. 48 ☾ Last Quarter - - - 28. 15. 2
F. Sa.	1	Giles.	<i>Other Phenomena.</i>
	2	London burnt 1666, O.S.	D. H. M. 7. 7. 31 ☿ α Ω, * 10' $\frac{3}{4}$ S. of ☿. 7. - - ☾ eclipsed, visible. 10. 4. 3 ☽ α ♍. 13. 21. 53 ☽ α ♍. 20. 23. 31 ☽ ♀. 21. - - ☽ eclipsed, partly vis. 22. 13. 28 ☽ ♀. 22. 15. 48 ☾ enters ♈. 27. 9. 50 ☽ β ♄.
Sun.	3	14th Sund. after Trinity.	
M.	4		
Tu.	5		
W.	6		
Th.	7	Enurchus.	
F.	8	Nat. of B. V. Mary.	
Sa.	9		
Sun.	10	15th Sund. after Trinity.	
M.	11		
Tu.	12		
W.	13		
Th.	14	Holy Cross.	
F.	15		
Sa.	16		
Sun.	17	16th S. aft. Tr. Lambert.	
M.	18		
Tu.	19		
W.	20		
Th.	21	St. Matthew.	
F.	22	K. G. III. crowned 1761.	
Sa.	23		
Sun.	24	17th Sund. after Trinity.	
M.	25		
Tu.	26	St. Cyprian.	
W.	27		
Th.	28		
F.	29	St. Mich. Q. of Wirt. b.	
Sa.	30	St. Jerome.	

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Sub. from app. Time.</i>	Diff.
		Longitude.	Rt. Ascen. <i>in Time.</i>	Declin. <i>North.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
F.	1	5. 8. 53. 44	10. 42. 1, 0	8. 14. 37	0. 12, 7	18, 8
Sa.	2	5. 9. 51. 53	10. 45. 38, 7	7. 52. 44	0. 31, 5	19, 1
Sun.	3	5. 10. 50. 5	10. 49. 16, 1	7. 30. 42	0. 50, 6	19, 4
M.	4	5. 11. 48. 18	10. 52. 53, 2	7. 8. 34	1. 10, 0	19, 6
Tu.	5	5. 12. 46. 33	10. 56. 30, 2	6. 46. 18	1. 29, 6	19, 7
W.	6	5. 13. 44. 51	11. 0. 6, 9	6. 23. 56	1. 49, 3	20, 0
Th.	7	5. 14. 43. 10	11. 3. 43, 4	6. 1. 27	2. 9, 3	20, 2
F.	8	5. 15. 41. 31	11. 7. 19, 7	5. 38. 52	2. 29, 5	20, 3
Sa.	9	5. 16. 39. 53	11. 10. 55, 9	5. 16. 11	2. 49, 8	20, 5
Sun.	10	5. 17. 38. 18	11. 14. 31, 9	4. 53. 25	3. 10, 3	20, 7
M.	11	5. 18. 36. 44	11. 18. 7, 8	4. 30. 34	3. 31, 0	20, 7
Tu.	12	5. 19. 35. 12	11. 21. 43, 5	4. 7. 39	3. 51, 7	20, 9
W.	13	5. 20. 33. 41	11. 25. 19, 1	3. 44. 39	4. 12, 6	21, 0
Th.	14	5. 21. 32. 12	11. 28. 54, 6	3. 21. 35	4. 33, 6	21, 0
.	15	5. 22. 30. 45	11. 32. 30, 1	2. 58. 28	4. 54, 6	21, 1
Sa.	16	5. 23. 29. 19	11. 36. 5, 5	2. 35. 18	5. 15, 7	21, 1
Sun.	17	5. 24. 27. 55	11. 39. 40, 9	2. 12. 4	5. 36, 8	21, 1
M.	18	5. 25. 26. 32	11. 43. 16, 3	1. 48. 48	5. 57, 9	21, 1
Tu.	19	5. 26. 25. 11	11. 46. 51, 7	1. 25. 30	6. 19, 0	21, 1
W.	20	5. 27. 23. 52	11. 50. 27, 1	1. 2. 9	6. 40, 1	21, 1
Th.	21	5. 28. 22. 34	11. 54. 2, 5	0. 38. 48	7. 1, 2	20, 9
F.	22	5. 29. 21. 19	11. 57. 38, 1	0. 15. 24 <i>South.</i>	7. 22, 1	20, 8
Sa.	23	6. 0. 20. 6	12. 1. 13, 7	0. 8. 0	7. 42, 9	20, 7
Sun.	24	6. 1. 18. 54	12. 4. 49, 5	0. 31. 25	8. 3, 6	20, 6
M.	25	6. 2. 17. 45	12. 8. 25, 5	0. 54. 51	8. 24, 2	20, 3
Tu.	26	6. 3. 16. 38	12. 12. 1, 6	1. 18. 16	8. 44, 5	20, 2
W.	27	6. 4. 15. 34	12. 15. 38, 0	1. 41. 41	9. 4, 7	19, 9
Th.	28	6. 5. 14. 32	12. 19. 14, 6	2. 5. 6	9. 24, 6	19, 7
F.	29	6. 6. 13. 32	12. 22. 51, 4	2. 28. 30	9. 44, 3	19, 3
Sa.	30	6. 7. 12. 35	12. 26. 28, 5	2. 51. 52	10. 3, 6	

Days	Time of ☉'s Semidiam. pass ^d . Merid.	THE SUN'S			Place of the D's Node.
	M. S.	Semi- diameter.	Hourly Motion.	Logar. Distance.	S. D. M.
1	1. 4. 2	15. 53. 3	2. 25. 4	0. 00354	11. 23. 30
7	1. 3. 9	15. 54. 8	2. 25. 8	0. 00288	11. 23. 11
13	1. 3. 8	15. 56. 3	2. 26. 3	0. 00219	11. 22. 52
19	1. 3. 8	15. 57. 9	2. 26. 8	0. 00147	11. 22. 33
25	1. 3. 9	15. 59. 5	2. 27. 3	0. 00074	11. 22. 14

ECLIPSES OF THE SATELLITES OF JUPITER.					
MEAN TIME.					
I. Satellite.		II. Satellite.		III. Satellite.	
<i>Immersion.</i>		<i>Immersion.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	1. 8. 24	*4	8. 21. 1	*3	14. 31. 3 Im.
3	19. 37. 8	7	21. 39. 7	3	17. 41. 43 E.
*5	14. 5. 48	<i>Emersion.</i>		10	18. 32. 40 Im.
*7	8. 34. 34	11	13. 42. 5	10	21. 42. 27 E.
9	3. 3. 15	15	3. 0. 0	17	22. 34. 16 Im.
	<i>Emersion.</i>	18	16. 17. 51	18	1. 43. 13 E.
10	23. 45. 29	22	5. 35. 46	25	2. 35. 51 Im.
12	18. 14. 11	25	18. 53. 37	25	5. 43. 57 E.
*14	12. 42. 58	*29	8. 11. 30		
*16	7. 11. 41				
18	1. 40. 29				
19	20. 9. 12				
*21	14. 38. 2				
*23	9. 6. 46				
25	3. 35. 38				
26	22. 4. 23				
28	16. 33. 17				
*30	11. 2. 3				
				IV. Satellite.	
				9	2. 26. 23 Im.
				9	6. 8. 46 E.
				25	20. 45. 47 Im.
				26	0. 20. 18 E.

THE PLANETS'								
Days	Heliocentric		Geocentric		Declin.	Rt. Asc. in Time.	Passage Merid.	
	Long.	Lat.	Long.	Lat.				
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	H. M.	
♿ MERCURY. Gr. Elong. 5 ^d .								
1	0. 25. 35	2. 29 S	4. 22. 2	0. 59 S	13. 15 N	9. 36	22. 53	
4	1. 12. 57	0. 24 S	4. 23. 54	0. 8 S	13. 26	9. 45	22. 52	
7	2. 1. 19	1. 50 N	4. 26. 55	0. 35 N	13. 6	9. 57	22. 55	
10	2. 20. 13	3. 56	5. 0. 53	1. 8	12. 14	10. 13	23. 1	
13	3. 8. 59	5. 35	5. 5. 36	1. 31	10. 53	10. 32	23. 9	
16	3. 27. 0	6. 37	5. 10. 46	1. 45	9. 10	10. 52	23. 19	
19	4. 13. 49	7. 0	5. 16. 11	1. 51	7. 9	11. 12	23. 28	
22	4. 29. 13	6. 49	5. 21. 42	1. 49	4. 58	11. 32	23. 38	
25	5. 13. 12	6. 15	5. 27. 13	1. 42	2. 40	11. 52	23. 47	
28	5. 25. 53	5. 24	6. 2. 39	1. 30	0. 20 N	12. 12	23. 56	
30	6. 3. 43	4. 44	6. 6. 13	1. 21	1. 14 S	12. 25	0. 1	
♀ VENUS.								
1	11. 29. 21	3. 17 S	4. 1. 15	5. 44 S	14. 18 N	8. 9	21. 25	
7	0. 8. 54	3. 6	4. 4. 3	4. 56	14. 28	8. 21	21. 16	
13	0. 18. 28	2. 50	4. 7. 41	4. 7	14. 23	8. 36	21. 10	
19	0. 28. 2	2. 29	4. 12. 1	3. 19	14. 2	8. 54	21. 7	
25	1. 7. 38	2. 4	4. 16. 52	2. 32	13. 23	9. 14	21. 6	
♂ MARS.								
1	7. 8. 45	0. 18 N	6. 15. 59	0. 13 N	6. 6 S	12. 59	2. 17	
7	7. 11. 43	0. 12	6. 19. 55	0. 9	7. 40	13. 14	2. 10	
13	7. 14. 42	0. 7	6. 23. 54	0. 5	9. 13	13. 29	2. 3	
19	7. 17. 43	0. 1 N	6. 27. 55	0. 1 N	10. 44	13. 44	1. 57	
25	7. 20. 46	0. 5 S	7. 1. 59	0. 3 S	12. 14	13. 59	1. 51	
♃ JUPITER. ♄ 10 ^d . 16 ^h .								
1	11. 17. 24	1. 14 S	11. 19. 33	1. 32 S	5. 33 S	23. 24	12. 40	
7	11. 17. 57	1. 14	11. 18. 46	1. 33	5. 52	23. 21	12. 15	
13	11. 18. 30	1. 14	11. 17. 58	1. 33	6. 11	23. 18	11. 51	
19	11. 19. 3	1. 14	11. 17. 11	1. 33	6. 30	23. 15	11. 26	
25	11. 19. 35	1. 15	11. 16. 26	1. 33	6. 47	23. 12	11. 2	
♄ SATURN.								
1	0. 9. 2	2. 26 S	0. 12. 25	2. 41 S	2. 27 N	0. 50	14. 6	
7	0. 9. 14	2. 26	0. 12. 3	2. 42	2. 17	0. 49	13. 43	
13	0. 9. 26	2. 26	0. 11. 38	2. 43	2. 7	0. 47	13. 20	
19	0. 9. 39	2. 26	0. 11. 12	2. 43	1. 56	0. 45	12. 56	
25	0. 9. 51	2. 26	0. 10. 45	2. 44	1. 45	0. 44	12. 33	
♅ GEORGIAN. ☐ 17 ^d . 11 ^h .								
1	8. 27. 41	0. 12 S	8. 24. 49	0. 12 S	23. 34 S	17. 37	6. 54	
11	8. 27. 48	0. 12	8. 24. 50	0. 12	23. 34	17. 37	6. 18	
21	8. 27. 55	0. 12	8. 24. 57	0. 12	23. 34	17. 38	5. 43	

Days of the Week.	Days of the Month.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
F.	1	3. 1. 28. 36	3. 7. 45. 5	5. 13. 6 N	5. 6. 8 N
Sa.	2	3. 13. 57. 43	3. 20. 6. 54	4. 55. 39	4. 41. 51
Sun.	3	3. 26. 13. 2	4. 2. 16. 29	4. 24. 56	4. 5. 10
M.	4	4. 8. 17. 35	4. 14. 16. 42	3. 42. 48	3. 18. 6
Tu.	5	4. 20. 14. 7	4. 26. 10. 10	2. 51. 20	2. 22. 48
W.	6	5. 2. 5. 8	5. 7. 59. 17	1. 52. 48	1. 21. 38
Th.	7	5. 13. 52. 53	5. 19. 46. 16	0. 49. 38 N	0. 17. 7 N
F.	8	5. 25. 39. 39	6. 1. 33. 22	0. 15. 36 S	0. 48. 11 S
Sa.	9	6. 7. 27. 41	6. 13. 22. 55	1. 20. 18	1. 51. 39
Sun.	10	6. 19. 19. 25	6. 25. 17. 32	2. 21. 54	2. 50. 44
M.	11	7. 1. 17. 38	7. 7. 20. 6	3. 17. 51	3. 42. 57
Tu.	12	7. 13. 25. 22	7. 19. 33. 51	4. 5. 42	4. 25. 51
W.	13	7. 25. 46. 0	8. 2. 2. 16	4. 43. 6	4. 57. 11
Th.	14	8. 8. 23. 6	8. 14. 48. 57	5. 7. 49	5. 14. 45
F.	15	8. 21. 20. 13	8. 27. 57. 15	5. 17. 46	5. 16. 39
Sa.	16	9. 4. 40. 22	9. 11. 29. 48	5. 11. 13	5. 1. 21
Sun.	17	9. 18. 25. 42	9. 25. 28. 3	4. 46. 58	4. 28. 5
M.	18	10. 2. 36. 44	10. 9. 51. 28	4. 4. 47	3. 37. 16
Tu.	19	10. 17. 11. 48	10. 24. 37. 7	3. 5. 50	2. 30. 55
W.	20	11. 2. 6. 38	11. 9. 39. 24	1. 53. 5	1. 13. 1 S
Th.	21	11. 17. 14. 23	11. 24. 50. 25	0. 31. 28 S	0. 10. 45 N
F.	22	0. 2. 26. 18	0. 10. 0. 49	0. 52. 44 N	1. 33. 39
Sa.	23	0. 17. 32. 48	0. 25. 1. 11	2. 12. 42	2. 49. 8
Sun.	24	1. 2. 24. 59	1. 9. 43. 23	3. 22. 20	3. 51. 48
M.	25	1. 16. 55. 44	1. 24. 1. 35	4. 17. 8	4. 38. 6
Tu.	26	2. 1. 0. 39	2. 7. 52. 49	4. 54. 34	5. 6. 31
W.	27	2. 14. 38. 4	2. 21. 16. 37	5. 13. 59	5. 17. 6
Th.	28	2. 27. 48. 44	3. 4. 14. 48	5. 16. 1	5. 10. 58
F.	29	3. 10. 35. 17	3. 16. 50. 38	5. 2. 11	4. 49. 53
Sa.	30	3. 23. 1. 25	3. 29. 8. 10	4. 34. 22	4. 15. 53

Days of the Week.	Days of the Month.	THE MOON'S					
		Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	Midn.	Noon.	Midnight.
				D. M.	D. M.	D. M.	D. M.
F.	1	25	20. 9	91. 41	98. 47	28. 41 N	28. 20 N
Sa.	2	26	21. 1	105. 45	112. 33	27. 38	26. 36
Sun.	3	27	21. 50	119. 9	125. 33	25. 16	23. 39
M.	4	28	22. 35	131. 45	137. 46	21. 47	19. 43
Tu.	5	29	23. 18	143. 36	149. 15	17. 28	15. 3
W.	6	30	23. 58	154. 46	160. 10	12. 30	9. 51
Th.	7	1	6	165. 28	170. 43	7. 7	4. 19 N
F.	8	2	0. 37	175. 55	181. 6	1. 29 N	1. 21 S
Sa.	9	3	1. 16	186. 19	191. 35	4. 11 S	7. 0
Sun.	10	4	1. 56	196. 55	202. 22	9. 46	12. 27
M.	11	5	2. 38	207. 57	213. 42	15. 2	17. 29
Tu.	12	6	3. 23	219. 39	225. 49	19. 47	21. 54
W.	13	7	4. 12	232. 13	238. 51	23. 48	25. 27
Th.	14	8	5. 6	245. 44	252. 51	26. 48	27. 49
F.	15	9	6. 3	260. 11	267. 41	28. 28	28. 44
Sa.	16	10	7. 2	275. 18	282. 59	28. 34	27. 58
Sun.	17	11	8. 2	290. 41	298. 21	26. 56	25. 28
M.	18	12	9. 1	305. 55	313. 21	23. 34	21. 17
Tu.	19	13	9. 58	320. 39	327. 47	18. 39	15. 42
W.	20	14	10. 52	334. 48	341. 41	12. 30	9. 6
Th.	21	15	11. 44	348. 28	355. 11	5. 32 S	1. 53 S
F.	22	16	12. 36	1. 53	8. 35	1. 47 N	5. 24 N
Sa.	23	17	13. 29	15. 19	22. 7	8. 56	12. 19
Sun.	24	18	14. 23	29. 1	36. 1	15. 29	18. 24
M.	25	19	15. 19	43. 9	50. 24	21. 1	23. 17
Tu.	26	20	16. 17	57. 45	65. 11	25. 11	26. 41
W.	27	21	17. 15	72. 39	80. 7	27. 46	28. 27
Th.	28	22	18. 12	87. 31	94. 49	28. 43	28. 35
F.	29	23	19. 6	101. 58	108. 56	28. 4	27. 12
Sa.	30	24	19. 56	115. 42	122. 15	26. 0	24. 31

Days of the Week.	Days of the Month.	THE MOON'S					
		Semidiameter.		Hor. Parallax.		Proportional Logarithm.	
		<i>Noon.</i>	<i>Midn.</i>	<i>Noon.</i>	<i>Midn.</i>		
		M. S.	M. S.	M. S.	M. S.	<i>Noon.</i>	<i>Midn.</i>
F.	1	15. 15	15. 9	55. 51	55. 32	5082	5107
Sa.	2	15. 4	15. 0	55. 15	55. 0	5129	5149
Sun.	3	14. 57	14. 54	54. 46	54. 34	5168	5183
M.	4	14. 51	14. 49	54. 24	54. 16	5197	5207
Tu.	5	14. 47	14. 45	54. 9	54. 4	5217	5223
W.	6	14. 44	14. 43	54. 0	53. 57	5229	5233
Th.	7	14. 43	14. 43	53. 56	53. 56	5234	5234
F.	8	14. 43	14. 44	53. 57	53. 59	5233	5230
Sa.	9	14. 45	14. 47	54. 3	54. 9	5225	5217
Sun.	10	14. 49	14. 51	54. 16	54. 25	5207	5195
M.	11	14. 54	14. 57	54. 35	54. 47	5182	5166
Tu.	12	15. 1	15. 5	55. 1	55. 17	5148	5127
W.	13	15. 10	15. 15	55. 34	55. 53	5105	5080
Th.	14	15. 21	15. 27	56. 14	56. 37	5053	5023
F.	15	15. 34	15. 41	57. 2	57. 28	4991	4959
Sa.	16	15. 48	15. 55	57. 55	58. 22	4925	4891
Sun.	17	16. 3	16. 11	58. 49	59. 16	4858	4825
M.	18	16. 18	16. 24	59. 42	60. 6	4793	4764
Tu.	19	16. 30	16. 35	60. 28	60. 47	4738	4715
W.	20	16. 40	16. 42	61. 3	61. 14	4696	4683
Th.	21	16. 44	16. 45	61. 20	61. 21	4676	4675
F.	22	16. 44	16. 42	61. 18	61. 10	4678	4688
Sa.	23	16. 38	16. 33	60. 57	60. 40	4703	4723
Sun.	24	16. 27	16. 21	60. 19	59. 55	4748	4777
M.	25	16. 14	16. 7	59. 29	59. 1	4809	4843
Tu.	26	15. 59	15. 51	58. 32	58. 3	4879	4915
W.	27	15. 43	15. 35	57. 35	57. 7	4950	4985
Th.	28	15. 28	15. 21	56. 40	56. 15	5019	5051
F.	29	15. 15	15. 9	55. 52	55. 31	5081	5108
Sa.	30	15. 4	14. 59	55. 12	54. 55	5133	5156

DISTANCES of MOON'S <i>Centre</i> from SUN, and from STARS <i>EAST</i> of her.											
Stars' Names.	Days	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .		
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.		
The Sun.	1	67. 31. 3	66. 4. 12	64. 37. 35	63. 11. 13	61. 45. 5	60. 19. 11	58. 53. 30	57. 28. 1		
	2	56. 2. 46	54. 37. 43	53. 12. 51	51. 46. 10	50. 23. 41	48. 59. 22	47. 35. 13	46. 11. 13		
	3	44. 47. 23	43. 23. 42	42. 0. 9	40. 36. 44	39. 13. 27	- - -	- - -	- - -		
Antares.	10	47. 53. 18	46. 23. 44	44. 54. 3	43. 24. 17	41. 54. 26	40. 24. 28	38. 54. 23	37. 24. 11		
	11	36. 53. 52	34. 23. 26	32. 52. 51	31. 22. 7	29. 51. 16	28. 20. 15	26. 49. 5	25. 17. 44		
	12	23. 46. 14	- - -	- - -	- - -	- - -	- - -	- - -	- - -		
α Aquilæ.	13	70. 44. 53	78. 29. 3	77. 13. 13	75. 57. 24	74. 41. 37	73. 25. 53	72. 10. 14	70. 54. 41		
	13	69. 39. 14	68. 23. 53	67. 8. 44	65. 53. 45	64. 38. 59	63. 24. 28	62. 10. 14	60. 56. 19		
	14	59. 42. 43	- - -	- - -	- - -	- - -	- - -	- - -	- - -		
Fomalhaut.	14	81. 35. 48	80. 5. 36	78. 35. 8	77. 4. 27	75. 33. 31	74. 2. 21	72. 30. 58	70. 59. 22		
	15	69. 27. 33	67. 55. 31	66. 23. 17	64. 50. 52	63. 18. 17	61. 45. 31	60. 12. 37	58. 39. 35		
	16	57. 6. 28	55. 33. 16	54. 0. 1	52. 26. 45	50. 53. 27	- - -	- - -	- - -		
α Pegasi.	16	- - -	- - -	- - -	- - -	72. 32. 42	70. 56. 17	69. 19. 34	67. 42. 36		
	17	66. 5. 25	64. 28. 1	62. 50. 27	61. 12. 43	59. 34. 53	57. 56. 54	56. 18. 52	54. 40. 50		
	18	53. 2. 50	51. 24. 55	49. 47. 8	48. 9. 31	46. 32. 7	- - -	- - -	- - -		
α Arctis.	18	- - -	- - -	- - -	- - -	86. 0. 39	84. 11. 43	82. 22. 24	80. 32. 45		
	19	78. 42. 44	76. 52. 23	75. 1. 44	73. 10. 48	71. 19. 33	69. 28. 2	67. 36. 16	65. 44. 16		
	20	63. 52. 3	61. 59. 38	60. 7. 3	58. 14. 19	56. 21. 27	54. 28. 27	52. 35. 24	50. 42. 17		
	21	48. 49. 8	46. 56. 58	45. 2. 51	43. 9. 49	41. 16. 52	39. 24. 4	37. 31. 26	35. 39. 1		
	22	33. 46. 50	- - -	- - -	- - -	- - -	- - -	- - -	- - -		

Stars' Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Aldebaran.	22	65.	3. 59	63.	12. 8	61.	20. 29	59.	29. 2	57.	37. 51	55.	46. 56	53.	56. 22	52.	6. 9
	23	50.	16. 18	48.	26. 51	46.	37. 53	44.	49. 25	43.	1. 29	41.	14. 5	39.	27. 23	37.	41. 23
	24	35.	56. 9	34.	11. 46	32.	28. 17	30.	45. 46	29.	4. 17	-	-	-	-	-	-
Pollux.	24	-	-	-	-	-	-	-	-	70.	43. 13	68.	54. 39	67.	6. 31	65.	18. 49
	25	63.	31. 32	61.	44. 41	59.	58. 17	58.	12. 19	56.	26. 48	54.	41. 44	52.	57. 8	51.	12. 58
	26	49.	29. 16	47.	46. 1	46.	3. 13	44.	20. 52	42.	38. 59	40.	57. 33	39.	16. 33	37.	36. 1
	27	35.	55. 55	34.	16. 16	32.	37. 2	30.	58. 14	29.	19. 53	27.	41. 56	26.	4. 25	24.	27. 20
	28	22.	50. 40	21.	14. 26	19.	38. 37	18.	3. 14	16.	28. 17	-	-	-	-	-	-
The Sun.	26	-	-	120.	32. 1	118.	56. 27	117.	21. 20	115.	46. 40	114.	12. 27	112.	38. 40	111.	5. 19
	27	109.	32. 24	107.	59. 55	106.	27. 50	104.	56. 11	103.	24. 56	101.	54. 6	100.	23. 38	98.	53. 34
	28	97.	23. 54	95.	54. 36	94.	25. 40	92.	57. 5	91.	28. 52	90.	0. 59	88.	33. 25	87.	6. 11
	29	85.	39. 16	84.	12. 40	82.	46. 21	81.	20. 20	79.	54. 36	78.	29. 8	77.	3. 55	75.	38. 58
	30	74.	14. 16	72.	49. 48	71.	25. 33	70.	1. 31	68.	37. 42	67.	14. 5	65.	50. 38	64.	27. 23
	0.1	63.	4. 18	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DISTANCES of MOON'S Centre from SUN, and from STARS WEST of her.

Stars' Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.	XV ^h .		XVIII ^h .		XXI ^h .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Aldebaran.	1	26. 25. 13	27. 51. 31	29. 18. 13	30. 45. 18	32. 12. 41	33. 40. 22	35. 8. 16	36. 36. 21							
	2	38. 4. 36	39. 32. 52	41. 1. 12	42. 29. 36	43. 58. 2	45. 26. 27	46. 54. 52	48. 23. 17							
	3	49. 51. 41	51. 20. 2	52. 48. 21	54. 16. 39	55. 44. 54	57. 13. 6	58. 41. 16	60. 9. 23							
	4	61. 37. 27	63. 5. 28	64. 33. 27	66. 1. 23	67. 29. 15	-	-	-							
The Sun.	10	-	-	-	-	-	-	-	-							
	11	42. 47. 4	44. 10. 14	45. 33. 32	46. 57. 0	48. 20. 35	49. 44. 20	51. 8. 15	52. 32. 20							
	12	53. 56. 35	55. 21. 1	56. 45. 38	58. 10. 27	59. 35. 28	61. 0. 41	62. 26. 8	63. 51. 48							
	13	65. 17. 42	66. 43. 50	68. 10. 13	69. 36. 51	71. 3. 45	72. 30. 55	73. 58. 22	75. 26. 6							
	14	76. 54. 7	78. 22. 26	79. 51. 4	81. 20. 2	82. 49. 18	84. 18. 54	85. 48. 51	87. 19. 8							
	15	88. 49. 46	90. 20. 45	91. 52. 7	93. 23. 51	94. 55. 57	96. 28. 26	98. 1. 19	99. 34. 36							
	16	101. 8. 16	102. 42. 20	104. 16. 49	105. 51. 43	107. 27. 1	109. 2. 45	110. 38. 54	112. 15. 28							
	17	113. 52. 28	115. 29. 53	117. 7. 43	118. 45. 59	120. 24. 40	-	-	-							
	15	59. 56. 50	61. 35. 6	63. 13. 45	64. 52. 47	66. 32. 10	68. 11. 56	69. 52. 6	71. 32. 40							
Spica η .	16	73. 13. 37	74. 54. 59	76. 36. 45	78. 18. 56	80. 1. 32	81. 44. 33	83. 27. 59	85. 11. 51							
	17	86. 56. 8	-	-	-	-	-	-	-							
	17	41. 1. 46	42. 46. 28	44. 31. 35	46. 17. 8	48. 3. 7	49. 49. 31	51. 36. 20	53. 23. 34							
Antares.	18	55. 11. 12	56. 59. 16	58. 47. 43	60. 36. 34	62. 25. 48	64. 15. 25	66. 5. 25	67. 55. 46							
	19	69. 46. 28	71. 37. 32	73. 28. 54	75. 20. 36	77. 12. 36	79. 4. 54	80. 57. 28	82. 50. 17							
	20	84. 43. 21	86. 36. 39	88. 30. 8	90. 23. 49	92. 17. 41	94. 11. 41	96. 5. 51	98. 0. 7							
	21	99. 54. 29	-	-	-	-	-	-	-							

Stars' Names.	Days	Noon.		III ^h .	VI ^h .		IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D.	M. S.		D.	M. S.					
α Aquilæ.	21	54.36.53		56. 1.41	57.27.42	58.54.40		60.22.39	61.51.28	63.21. 7	64.51.26
	22	66.22.24		67.53.51	69.25.45	70.58. 3		72.30.41	74. 3.34	75.36.39	77. 9.50
	23	78.43. 5		- - -	- - -	- - -		- - -	- - -	- - -	- - -
Fomalhaut.	23	50.51.28		52.34. 1	54.16.47	55.50.41		57.42.41	59.25.45	61. 8.49	62.51.52
	24	64.34.51		66.17.40	68. 0.21	69.42.51		71.25. 8	73. 7.10	74.48.56	76.30.24
	25	78.11.31		- - -	- - -	- - -		- - -	- - -	- - -	- - -
α Pegasi.	25	56.31. 5		58. 9.17	59.47.22	61.25.19		63. 3. 6	64.40.42	66.18. 6	67.55.17
	26	69.32.13		71. 8.52	72.45.13	74.21.17		75.57. 2	77.32.27	79. 7.33	80.42.17
	27	82.16.39		- - -	- - -	- - -		- - -	- - -	- - -	- - -
α Arietis.	27	39.23. 8		41. 1.30	42.39.32	44.17.14		45.51.36	47.31.38	49. 8.21	50.44.45
	28	52.20.48		53.56.31	55.31.55	57. 7. 1		58.41.47	60.16.14	61.50.24	63.24.16
	29	64.57.49		- - -	- - -	- - -		- - -	- - -	- - -	- - -
Aldebaran.	29	34.52.36		36.21.50	37.51. 4	39.20.18		40.49.33	42.18.46	43.47.56	45.17. 3
	30	46.46. 7		48.15. 5	49.43.58	51.12.46		52.41.29	54.10. 6	55.38.38	57. 7. 3
	O. 1	58.35.22		- - -	- - -	- - -		- - -	- - -	- - -	- - -

CONFIGURATIONS of the SATELLITES of JUPITER,
at Nine o'Clock in the *Evening*.

1		2°	○	1°	3°	
2		1 6 2	○		3° 4°	
3			○	3° 1° 2°		4°
4	2. ●	3° 1°	○			4°
5		3° 2°	○	1°		4°
6		3° 1°	○	2°		4°
7	1. ●		○	3° 2° 4°		
8		2°	○	1° 4° 3°		
9		2° 1 6 4	○		3°	
10		4°	○	1 6 3° 2°		
11		4°	1 6 3	○	2°	
12	4°	3° 2°	○	1°		
13	4°	3° 1°	○	2°		
14	4°		○	1° 2°		3° ○
15		4° 2°	○	3°		1° ○
16		4° 2° 1°	○	3°		
17			○	1 2 6 3		4° ○
18		1 6 3	○	2° 4°		
19		3° 2°	○	1° 4°		
20	2. ○	3° 1°	○			4°
21		3°	○	1° 2°		4°
22		2° 1°	○	3°		4°
23	1. ●	2°	○	3° 4°		
24			○	1° 2° 3° 4°		
25		1° 3°	○	4° 2°		
26		3° 4° 2°	○	1°		
27		4° 3° 1° 2°	○			
28	4°	3°	○	1° 2°		
29	4°	1 6 2	○	3°		
30	4°	2°	○	3°		1. ●

Days of the Week.	Days of the Month.	<i>Sundays, Holidays, Terms, &c.</i>	<i>Phases of the MOON.</i>
			<p>D. H. M.</p> <p>● New Moon - - - 6. 19. 14</p> <p>☾ First Quarter - - 14. 12. 52</p> <p>○ Full Moon - - - 21. 4. 16</p> <p>☾ Last Quarter - - 28. 7. 27</p>
Sun.	1	18th S. aft. Tr. Remigius.	<p><i>Other Phenomena.</i></p> <p>D. H. M.</p> <p>2. 20. 35 ☾ α Ω.</p> <p>7. 10. 7 ☾ α ♊.</p> <p>11. 3. 44 ☾ α ♍.</p> <p>11. 4. 37 ☽ α ♈, * 35' N. of ☽.</p> <p>18. 4. 57½ Im. of ♄, ♄ 15½ } N. of</p> <p>18. 5. 27½ E. of ♄, ♄ 13½ } ☽'s C.</p> <p>22. 14. 10 ☽ α ♈, * 86' N. of ☽.</p> <p>22. 23. 58 ☾ enters ♍.</p> <p>24. 19. 4 ☾ β ♋.</p> <p>27. 3. 16 ☾ Pollux.</p> <p>30. 3. 28 ☾ α Ω.</p>
M.	2		
Tu.	3		
W.	4		
Th.	5		
F.	6	Faith.	
Sa.	7		
Sun.	8	19th Sund. after Trinity.	
M.	9	S. Denys.	
Tu.	10	Oxf. and Camb. T. beg.	
W.	11		
Th.	12		
F.	13	Trans. of K. Edw. Conf.	
Sa.	14		
Sun.	15	20th Sund. after Trinity.	
M.	16		
Tu.	17	Ethelred.	
W.	18	St. Luke.	
Th.	19		
F.	20		
Sa.	21		
Sun.	22	21st Sund. after Trinity.	
M.	23		
Tu.	24		
W.	25	K. G. III. Acces. Crispin.	
Th.	26	K. Geo. III. procl. 1760.	
F.	27		
Sa.	28	St. Simon and St. Jude.	
Sun.	29	22d Sund. after Trinity.	
M.	30		
Tu.	31		

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Sub. from app. Time.</i>	Diff.
		Longitude.	Rt. Ascen. <i>in Time.</i>	Declin. <i>South.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
Sun.	1	6. 8. 11. 40	12. 30. 5, 9	3. 15. 13	10. 22, 7	18, 8
M.	2	6. 9. 10. 47	12. 33. 43, 7	3. 38. 32	10. 41, 5	18, 5
Tu.	3	6. 10. 9. 57	12. 37. 21, 7	4. 1. 49	11. 0, 0	18, 1
W.	4	6. 11. 9. 9	12. 41. 0, 1	4. 25. 3	11. 18, 1	17, 7
Th.	5	6. 12. 8. 23	12. 44. 38, 9	4. 48. 13	11. 35, 8	17, 4
F.	6	6. 13. 7. 39	12. 48. 18, 0	5. 11. 20	11. 53, 2	17, 0
Sa.	7	6. 14. 6. 58	12. 51. 57, 6	5. 34. 23	12. 10, 2	16, 6
Sun.	8	6. 15. 6. 18	12. 55. 37, 5	5. 57. 22	12. 26, 7	16, 1
M.	9	6. 16. 5. 40	12. 59. 17, 9	6. 20. 17	12. 42, 8	15, 7
Tu.	10	6. 17. 5. 5	13. 2. 58, 7	6. 43. 6	12. 58, 5	15, 2
W.	11	6. 18. 4. 31	13. 6. 40, 0	7. 5. 49	13. 13, 7	14, 8
Th.	12	6. 19. 3. 59	13. 10. 21, 8	7. 28. 27	13. 28, 5	14, 2
F.	13	6. 20. 3. 29	13. 14. 4, 0	7. 50. 59	13. 42, 7	13, 8
Sa.	14	6. 21. 3. 1	13. 17. 46, 8	8. 13. 24	13. 56, 5	13, 2
Sun.	15	6. 22. 2. 34	13. 21. 30, 1	8. 35. 42	14. 9, 7	12, 7
M.	16	6. 23. 2. 9	13. 25. 13, 9	8. 57. 52	14. 22, 4	12, 1
Tu.	17	6. 24. 1. 46	13. 28. 58, 4	9. 19. 55	14. 34, 5	11, 6
W.	18	6. 25. 1. 24	13. 32. 43, 3	9. 41. 49	14. 46, 1	10, 9
Th.	19	6. 26. 1. 4	13. 36. 28, 9	10. 3. 35	14. 57, 0	10, 3
F.	20	6. 27. 0. 47	13. 40. 15, 1	10. 25. 12	15. 7, 3	9, 7
Sa.	21	6. 28. 0. 31	13. 44. 2, 0	10. 46. 40	15. 17, 0	9, 0
Sun.	22	6. 29. 0. 16	13. 47. 49, 5	11. 7. 58	15. 26, 0	8, 4
M.	23	7. 0. 0. 4	13. 51. 37, 7	11. 29. 6	15. 34, 4	7, 6
Tu.	24	7. 0. 59. 55	13. 55. 26, 6	11. 50. 4	15. 42, 0	6, 9
W.	25	7. 1. 59. 47	13. 59. 16, 2	12. 10. 51	15. 48, 9	6, 2
Th.	26	7. 2. 59. 42	14. 3. 6, 5	12. 31. 27	15. 55, 1	5, 4
F.	27	7. 3. 59. 39	14. 6. 57, 7	12. 51. 51	16. 0, 5	4, 6
Sa.	28	7. 4. 59. 38	14. 10. 49, 6	13. 12. 4	16. 5, 1	3, 9
Sun.	29	7. 5. 59. 39	14. 14. 42, 3	13. 32. 4	16. 9, 0	3, 1
M.	30	7. 6. 59. 43	14. 18. 35, 7	13. 51. 51	16. 12, 1	2, 3
Tu.	31	7. 7. 59. 49	14. 22. 30, 0	14. 11. 25	16. 14, 4	

Days.	Time of ☉'s Semidiam. pass ^t . Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semidia- meter. M. S.	Hourly Motion. M. S.	Logar. Distance.	S. D. M.
1	1. 4, 1	16. 1, 2	2. 27, 8	9. 99999	11. 21. 55
7	1. 4, 4	16. 2, 8	2. 28, 3	9. 99923	11. 21. 36
13	1. 4, 9	16. 4, 5	2. 28, 8	9. 99849	11. 21. 17
19	1. 5, 4	16. 6, 1	2. 29, 3	9. 99775	11. 20. 58
25	1. 6, 0	16. 7, 7	2. 29, 8	9. 99704	11. 20. 39

ECLIPSES OF THE SATELLITES OF JUPITER.					
MEAN TIME.					
I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emersions.</i>		<i>Emersions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	5. 30. 56	2	21. 29. 21	*2	6. 37. 46 Im.
3	23. 59. 44	*6	10. 47. 13	*2	9. 44. 54 E.
5	18. 28. 39	10	0. 5. 7	*9	10. 40. 30 Im.
*7	12. 57. 27	*13	13. 22. 57	*9	13. 46. 47 E.
*9	7. 26. 22	17	2. 40. 51	16	14. 43. 5 Im.
11	1. 55. 13	20	15. 58. 41	16	17. 48. 26 E.
12	20. 24. 9	24	5. 16. 35	23	18. 46. 22 Im.
14	14. 53. 1	27	18. 34. 26	23	21. 50. 49 E.
*16	9. 21. 58	*31	7. 52. 22	30	22. 48. 57 Im.
18	3. 50. 50			31	1. 52. 29 E.
19	22. 19. 48				
21	16. 48. 41				
*23	11. 17. 40				
25	5. 46. 32				
27	0. 15. 33				
28	18. 44. 27				
30	13. 13. 29				
				IV. Satellite.	
				12	15. 5. 28 Im.
				12	18. 31. 54 E.
				*29	9. 26. 20 Im.
				*29	12. 43. 46 E.

Days	THE PLANETS'							
	Heliocentric		Geocentric		Declin.	Rt. Asc. in Time.	Passage Merid.	
	Long.	Lat.	Long.	Lat.				
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	H. M.	
♄ MERCURY. Sup. ♂ 1 ^d . 6 ^h .								
1	6. 7. 20	1. 24 N	6. 7. 59	1. 16 N	2. 1 S	12. 31	0. 1	
4	6. 18. 8	3. 18	6. 13. 12	0. 59	4. 19	12. 50	0. 9	
7	6. 28. 8	2. 11	6. 18. 19	0. 40	6. 34	13. 9	0. 17	
10	7. 7. 24	1. 5 N	6. 23. 18	0. 20 N	8. 45	13. 27	0. 24	
13	7. 16. 18	0. 1 S	6. 28. 11	0. 0	10. 51	13. 45	0. 31	
16	7. 24. 53	1. 4	7. 2. 58	0. 21 S	12. 50	14. 2	0. 37	
19	8. 3. 15	2. 4	7. 7. 39	0. 41	14. 44	14. 20	0. 44	
22	8. 11. 31	3. 0	7. 12. 15	1. 0	16. 29	14. 38	0. 50	
25	8. 19. 45	3. 53	7. 16. 46	1. 20	18. 9	14. 56	0. 56	
28	8. 28. 4	4. 41	7. 21. 12	1. 38	19. 40	15. 13	1. 2	
31	9. 6. 33	5. 24	7. 25. 33	1. 55	21. 2	15. 31	1. 8	
♀ VENUS. Gr. Elong. 8 ^d .								
1	1. 17. 14	1. 35 S	4. 22. 10	1. 49 S	12. 20 N	9. 36	21. 6	
7	1. 26. 53	1. 4	4. 27. 50	1. 8	11. 11	9. 58	21. 7	
13	2. 0. 32	0. 30 S	5. 3. 47	0. 30 S	9. 40	10. 22	21. 8	
19	2. 16. 12	0. 4 N	5. 9. 59	0. 4 N	7. 54	10. 46	21. 10	
25	2. 25. 53	0. 38	5. 16. 23	0. 34	5. 54	11. 11	21. 12	
♂ MARS.								
1	7. 23. 51	0. 11 S	7. 6. 5	0. 7 S	13. 41 S	14. 15	1. 45	
7	7. 26. 58	0. 17	7. 10. 13	0. 11	15. 4	14. 31	1. 39	
13	8. 0. 6	0. 23	7. 14. 24	0. 15	16. 25	14. 47	1. 33	
19	8. 3. 17	0. 29	7. 18. 36	0. 18	17. 41	15. 4	1. 28	
25	8. 6. 29	0. 35	7. 22. 52	0. 22	18. 52	15. 21	1. 22	
♃ JUPITER.								
1	11. 20. 8	1. 15 S	11. 15. 43	1. 32 S	7. 3 S	23. 10	10. 38	
7	11. 20. 41	1. 15	11. 15. 5	1. 32	7. 18	23. 7	10. 14	
13	11. 21. 14	1. 15	11. 14. 32	1. 31	7. 30	23. 5	9. 50	
19	11. 21. 47	1. 16	11. 14. 5	1. 30	7. 39	23. 4	9. 26	
25	11. 22. 20	1. 16	11. 13. 44	1. 29	7. 46	23. 2	9. 2	
♄ SATURN. ♂ 2 ^d . 23 ^d .								
1	0. 10. 5	2. 27 S	0. 10. 17	2. 44 S	1. 34 N	0. 42	12. 10	
7	0. 10. 16	2. 27	0. 9. 48	2. 44	1. 22	0. 40	11. 46	
13	0. 10. 28	2. 27	0. 9. 20	2. 44	1. 12	0. 39	11. 23	
19	0. 10. 40	2. 27	0. 8. 53	2. 43	1. 2	0. 37	10. 59	
25	0. 10. 53	2. 27	0. 8. 28	2. 43	0. 52	0. 35	10. 34	
♂ GEORGIAN.								
1	8. 28. 2	0. 12 S	8. 25. 9	0. 12 S	23. 35 S	17. 39	5. 8	
11	8. 28. 5	0. 12	8. 25. 25	0. 12	23. 35	17. 40	4. 33	
21	8. 28. 16	0. 12	8. 25. 46	0. 12	23. 36	17. 42	3. 57	

Days of the Week.	Days of the Month.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Sun.	1	4. 5. 11. 27	4. 11. 11. 48	3. 54. 43 N	3. 31. 7 N
M.	2	4. 17. 9. 46	4. 23. 5. 51	3. 5. 22	2. 37. 45
Tu.	3	4. 29. 0. 34	5. 4. 54. 21	2. 8. 34	1. 38. 5
W.	4	5. 10. 47. 39	5. 16. 40. 52	1. 6. 37	0. 34. 28 N
Th.	5	5. 22. 34. 22	5. 28. 28. 28	0. 1. 56 N	0. 30. 38 S
F.	6	6. 4. 23. 29	6. 10. 19. 43	1. 2. 57 S	1. 34. 40
Sa.	7	6. 16. 17. 24	6. 22. 16. 47	2. 5. 26	2. 34. 57
Sun.	8	6. 28. 18. 4	7. 4. 21. 28	3. 2. 52	3. 28. 52
M.	9	7. 10. 27. 11	7. 16. 35. 26	3. 52. 38	4. 13. 52
Tu.	10	7. 22. 46. 24	7. 29. 0. 19	4. 32. 17	4. 47. 38
W.	11	8. 5. 17. 23	8. 11. 37. 50	4. 59. 38	5. 8. 6
Th.	12	8. 18. 1. 55	8. 24. 29. 52	5. 12. 49	5. 13. 38
F.	13	9. 1. 1. 57	9. 7. 38. 24	5. 10. 24	5. 3. 4
Sa.	14	9. 14. 19. 26	9. 21. 5. 17	4. 51. 32	4. 35. 50
Sun.	15	9. 27. 56. 6	10. 4. 51. 59	4. 16. 3	3. 52. 18
M.	16	10. 11. 52. 59	10. 18. 59. 3	3. 24. 47	2. 53. 48
Tu.	17	10. 26. 10. 2	11. 3. 25. 38	2. 19. 44	1. 43. 4
W.	18	11. 10. 45. 26	11. 18. 8. 53	1. 4. 23 S	0. 24. 19 S
Th.	19	11. 25. 35. 17	0. 3. 3. 48	0. 16. 24 N	0. 56. 59 N
F.	20	0. 10. 33. 30	0. 18. 3. 18	1. 36. 40	2. 14. 38
Sa.	21	0. 25. 32. 10	1. 2. 58. 58	2. 50. 9	3. 22. 34
Sun.	22	1. 10. 22. 37	1. 17. 42. 9	3. 51. 19	4. 15. 56
M.	23	1. 24. 56. 42	2. 2. 5. 31	4. 36. 8	4. 51. 43
Tu.	24	2. 9. 8. 3	2. 16. 3. 55	5. 2. 37	5. 8. 52
W.	25	2. 22. 52. 53	2. 29. 34. 56	5. 10. 36	5. 8. 2
Th.	26	3. 6. 10. 11	3. 12. 38. 53	5. 1. 24	4. 50. 59
F.	27	3. 19. 1. 24	3. 25. 18. 13	4. 37. 6	4. 20. 3
Sa.	28	4. 1. 29. 54	4. 7. 36. 59	4. 0. 11	3. 37. 47
Sun.	29	4. 13. 40. 8	4. 19. 40. 1	3. 13. 10	2. 46. 38
M.	30	4. 25. 37. 16	5. 1. 32. 33	2. 18. 29	1. 49. 1
Tu.	31	5. 7. 26. 31	5. 13. 19. 45	1. 18. 30	0. 47. 13 N

THE MOON'S							
Days of the Week.	Days of the Month.	Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	Midnight	Noon.	Midnight.
			H. M.	D. M.	D. M.	D. M.	D. M.
Sun.	1	25	20. 43	128. 35	134. 42	22. 47 N	20. 49 N
M.	2	26	21. 26	140. 36	146. 20	18. 39	16. 19
Tu.	3	27	22. 7	151. 55	157. 22	13. 50	11. 14
W.	4	28	22. 46	162. 42	167. 58	8. 33	5. 48
Th.	5	29	23. 25	173. 12	178. 24	2. 69 N	0. 8 N
F.	6	1	♄	183. 37	188. 52	2. 43 S	5. 33 S
Sa.	7	2	0. 5	194. 12	199. 37	8. 21	11. 5
Sun.	8	3	0. 46	205. 10	210. 52	13. 44	16. 16
M.	9	4	1. 31	216. 45	222. 49	18. 39	20. 52
Tu.	10	5	2. 18	229. 7	235. 38	22. 52	24. 38
W.	11	6	3. 10	242. 22	249. 19	26. 7	27. 17
Th.	12	7	4. 5	256. 28	263. 45	28. 7	28. 34
F.	13	8	5. 2	271. 10	278. 39	28. 38	28. 17
Sa.	14	9	6. 1	286. 8	293. 35	27. 31	26. 21
Sun.	15	10	6. 58	300. 58	308. 14	24. 47	22. 49
M.	16	11	7. 53	315. 22	322. 22	20. 31	17. 54
Tu.	17	12	8. 46	329. 14	335. 59	15. 0	11. 52
W.	18	13	9. 38	342. 39	349. 16	8. 32	5. 4 S
Th.	19	14	10. 28	355. 51	2. 26	1. 31 S	2. 5 N
F.	20	15	11. 20	9. 4	15. 47	5. 40 N	9. 10
Sa.	21	16	12. 13	22. 36	29. 34	12. 31	15. 41
Sun.	22	17	13. 9	36. 41	43. 57	18. 36	21. 13
M.	23	18	14. 7	51. 22	58. 55	23. 29	25. 22
Tu.	24	19	15. 7	66. 34	74. 16	26. 50	27. 51
W.	25	20	16. 6	81. 56	89. 32	28. 27	28. 36
Th.	26	21	17. 3	96. 59	104. 16	28. 20	27. 41
F.	27	22	17. 55	111. 19	118. 8	26. 41	25. 22
Sa.	28	23	18. 44	124. 43	131. 2	23. 46	21. 54
Sun.	29	24	19. 28	137. 7	143. 0	19. 49	17. 34
M.	30	25	20. 10	148. 42	154. 14	15. 10	12. 38
Tu.	31	26	20. 49	159. 38	164. 56	10. 0	7. 17

Days of the Week.	Days of the Month.	THE MOON's				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight	Noon.	Midnight		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
Sun.	1	14. 55	14. 52	54. 41	54. 29	5174	5190
M.	2	14. 49	14. 47	54. 19	54. 11	5205	5214
Tu.	3	14. 46	14. 45	54. 4	54. 1	5223	5227
W.	4	14. 44	14. 44	53. 58	53. 58	5231	5231
Th.	5	14. 44	14. 45	53. 59	54. 1	5230	5227
F.	6	14. 46	14. 47	54. 5	54. 10	5222	5215
Sa.	7	14. 49	14. 51	54. 16	54. 23	5207	5198
Sun.	8	14. 53	14. 55	54. 31	54. 40	5187	5175
M	9	14. 58	15. 1	54. 51	55. 3	5161	5145
Tu.	10	15. 5	15. 9	55. 16	55. 30	5128	5110
W.	11	15. 13	15. 18	55. 46	56. 3	5089	5067
Th.	12	15. 23	15. 28	56. 21	56. 40	5044	5019
F.	13	15. 33	15. 39	57. 0	57. 21	4994	4967
Sa.	14	15. 45	15. 51	57. 42	58. 5	4941	4912
Sun.	15	15. 57	16. 4	58. 28	58. 50	4884	4855
M.	16	16. 10	16. 16	59. 13	59. 34	4828	4803
Tu.	17	16. 21	16. 26	59. 54	60. 12	4778	4757
W.	18	16. 30	16. 33	60. 27	60. 40	4739	4723
Th.	19	16. 36	16. 37	60. 49	60. 53	4712	4708
F.	20	16. 37	16. 36	60. 54	60. 51	4707	4710
Sa.	21	16. 34	16. 31	60. 43	60. 31	4720	4734
Sun.	22	16. 27	16. 21	60. 15	59. 55	4753	4777
M.	23	16. 15	16. 8	59. 33	59. 8	4804	4834
Tu.	24	16. 1	15. 53	58. 41	58. 13	4868	4902
W.	25	15. 45	15. 38	57. 45	57. 17	4937	4972
Th.	26	15. 31	15. 24	56. 50	56. 24	5007	5040
F.	27	15. 17	15. 11	56. 0	55. 38	5071	5099
Sa.	28	15. 6	15. 1	55. 18	55. 0	5125	5149
Sun.	29	14. 57	14. 53	54. 44	54. 31	5170	5187
M.	30	14. 50	14. 48	54. 21	54. 13	5201	5211
Tu.	31	14. 47	14. 46	54. 8	54. 5	5218	5222

[illegible]

Stars' Names.	Days	Noon.	III ^b .	VI ^b .	IX ^b .	Midnight.	XV ^b .	XVIII ^b .	XXI ^b .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Fomalhaut.	21 22 23	58. 10. 44 72. 0. 49 85. 43. 2	59. 54. 20 73. 44. 20 - - -	61. 38. 3 75. 27. 42 - - -	69. 21. 50 77. 10. 53 - - -	65. 5. 41 78. 53. 51 - - -	66. 49. 32 80. 36. 34 - - -	68. 53. 22 82. 19. 2 - - -	70. 17. 8 84. 1. 12 - - -
" Pegasi.	23 24	63. 55. 35 77. 9. 16	65. 35. 33 78. 47. 16	67. 15. 21 80. 24. 56	68. 54. 56 82. 2. 15	70. 34. 19 83. 39. 11	72. 13. 27 - - -	73. 52. 20 - - -	75. 30. 57 - - -
" Arietis.	24 25 26 27	- - - 47. 30. 14 60. 36. 45 73. 19. 54	- - - 49. 9. 51 62. 13. 23	- - - 50. 49. 5 63. 49. 39	- - - 52. 27. 58 65. 25. 35	40. 48. 13 54. 6. 29 67. 1. 8	42. 29. 15 55. 44. 36 63. 36. 20	44. 9. 56 57. 22. 21 70. 11. 12	45. 50. 16 58. 59. 46 71. 45. 43
Aldebaran.	27 28 29 30	42. 53. 1 54. 57. 54 66. 52. 3 78. 37. 11	44. 24. 10 56. 27. 45 68. 20. 37	45. 55. 11 57. 57. 25 60. 49. 4	47. 26. 2 50. 26. 56 71. 17. 23	48. 56. 44 60. 56. 16 72. 45. 34	50. 27. 16 62. 25. 26 74. 13. 38	51. 57. 39 63. 54. 28 75. 41. 35	53. 27. 52 65. 23. 20 77. 9. 27
Pollux.	30 31 N. 1	35. 1. 50 46. 52. 5 58. 40. 23	36. 30. 51 48. 20. 36 - - -	37. 59. 48 49. 49. 11 - - -	39. 28. 40 51. 17. 42 - - -	40. 57. 27 52. 46. 13 - - -	42. 26. 10 54. 14. 44 - - -	43. 54. 51 55. 43. 16 - - -	45. 23. 29 57. 11. 49 - - -

CONFIGURATIONS OF THE SATELLITES OF JUPITER
at VIII o'Clock in the *Evening*.

1	.4		○	.2	3.	.1○
2	.4		○	2.		3.●
3		3.	○	.1		
4	.3	1. 2.	○	.4		
5		.3	○	1. 2.	.4	
6	2.●	.1	○	.3		.4
7		.2	○	1.	.3	.4
8	.1○		○	.2	3.	.4
9	3.●		○	2.		.4
10		3. 2.	○	.1		.4
11	.3	1 6 2	○	.4		
12		.3	○	.1 2		
13		.4 .1	○	2. 3		
14	.4	.2	○	1.	.3	
15	.4	.1	○	.2	3.	
16	.4		○	3.	2.	1.●
17	.4	3. 2.	○	.1		
18	.4 .3	.2 1.	○			
19	.4 .3		○	.1 2		
20		.1 .4	○	2 6 3		
21		.1	○	1. 4	.3	
22	.2○	.1	○	3. 4		
23	1.●		○	3. 2.		.4
24	.1○	3. 2.	○			.4
25		.3 .2 1.	○			.4
26		.3	○	.1 2		.4
27	.3○	1.	○	2.	.4	
28		2.	○	1 6 4	.3	
29	.2○	1 6 4	○		3.	
30		.4	○	1. 3. 0.		
31	.4	.3 2.	○			.1○

Days of the Week.	Days of the Month.	<i>Sundays, Holidays, Terms, &c.</i>	<i>Phases of the MOON.</i>	
			D. H. M.	
			● New Moon - - -	5. 12. 23
			☾ First Quarter - -	12. 21. 56
			○ Full Moon - - -	19. 15. 14
			☾ Last Quarter - - -	27. 3. 24
			<i>Other Phenomena.</i>	
			D. H. M.	
W.	1	<i>All Saints.</i>	3. 16. 51	☾ α ♍.
Th	2	<i>All Souls. D. of Kent b.</i>	6. - -	♄ Stationary.
F.	3	<i>On mor. of All Souls, 1 ret.</i>	7. 9. 32	☾ α ♍.
Sa.	4	<i>[Prs. Sophia born.]</i>	11. - -	♄ Stationary.
Sun.	5	<i>23d S. aft. Trin. [Powder]</i>	14. 12. 14	☾ ♄.
M.	6	<i>Mich. T. beg. [Plot, 1805]</i>	21. 5. 15	☾ β ♏.
Tu.	7	<i>[Leonard.]</i>	21. 20. 22	☉ enters ♏.
W.	8	<i>Prs. Augusta Sophia b.</i>	23. 12. 19	☾ Pollux.
Th.	9		26. - -	♄ Stationary.
F.	10		26. 11. 15	☾ α ♏.
Sa.	11	<i>St. Martin.</i>		
Sun.	12	<i>24th Sun. af. Tr. [Camb.]</i>		
M.	13	<i>Britius. [T. div. m. On</i>		
Tu.	14	<i>[mor. of St. M. 2 ret.]</i>		
W.	15	<i>Machutus.</i>		
Th.	16			
F.	17	<i>Hugh Bp. of Lincoln.</i>		
Sa.	18	<i>In 8 days of St. Mart. 3 ret.</i>		
Sun.	19	<i>25th Sund. aft. Trinity.</i>		
M.	20	<i>Edm. K. and Martyr.</i>		
Tu.	21			
W.	22	<i>Cecilia.</i>		
Th.	23	<i>St. Clement.</i>		
F.	24			
Sa.	25	<i>Cath. In 15 d. of St. Mart.</i>		
		<i>[4 ret.]</i>		
Sun.	26	<i>26th Sund. after Trinity.</i>		
M.	27			
Tu.	28	<i>Mich. Term ends.</i>		
W.	29			
Th.	30	<i>St. Andrew.</i>		

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time.	Diff.
		Longitude.	Rt. Ascen. in Time.	Declin. South.	Sub. from app. Time.	
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	
W.	1	7. 8. 59. 56	14. 26. 25, 1	14. 30. 46	16. 15, 9	0, 6
Th.	2	7. 10. 0. 6	14. 30. 21, 0	14. 49. 52	16. 16, 5	0, 2
F.	3	7. 11. 0. 18	14. 34. 17, 7	15. 8. 44	16. 16, 3	1, 0
Sa.	4	7. 12. 0. 32	14. 38. 15, 2	15. 27. 22	16. 15, 3	1, 8
Sun.	5	7. 13. 0. 48	14. 42. 13, 6	15. 45. 44	16. 13, 5	2, 6
M.	6	7. 14. 1. 6	14. 46. 12, 8	16. 3. 50	16. 10, 9	3, 5
Tu.	7	7. 15. 1. 26	14. 50. 12, 9	16. 21. 40	16. 7, 4	4, 4
W.	8	7. 16. 1. 47	14. 54. 13, 8	16. 39. 14	16. 3, 0	5, 1
Th.	9	7. 17. 2. 10	14. 58. 15, 5	16. 56. 30	15. 57, 9	6, 0
F.	10	7. 18. 2. 34	15. 2. 18, 1	17. 13. 30	15. 51, 9	6, 9
Sa.	11	7. 19. 3. 0	15. 6. 21, 5	17. 30. 11	15. 45, 0	7, 6
Sun.	12	7. 20. 3. 27	15. 10. 25, 8	17. 46. 34	15. 37, 4	8, 5
M.	13	7. 21. 3. 56	15. 14. 30, 8	18. 2. 39	15. 28, 9	9, 3
Tu.	14	7. 22. 4. 25	15. 18. 36, 7	18. 18. 25	15. 19, 6	10, 2
W.	15	7. 23. 4. 56	15. 22. 43, 4	18. 33. 51	15. 9, 4	10, 9
Th.	16	7. 24. 5. 28	15. 26. 51, 0	18. 48. 57	14. 58, 5	11, 8
F.	17	7. 25. 6. 2	15. 30. 59, 3	19. 3. 43	14. 46, 7	12, 6
Sa.	18	7. 26. 6. 36	15. 35. 8, 5	19. 18. 9	14. 34, 1	13, 4
Sun.	19	7. 27. 7. 12	15. 39. 18, 5	19. 32. 14	14. 20, 7	14, 2
M.	20	7. 28. 7. 50	15. 43. 29, 3	19. 45. 57	14. 6, 5	15, 0
Tu.	21	7. 29. 8. 29	15. 47. 41, 0	19. 59. 19	13. 51, 5	15, 9
W.	22	8. 0. 9. 10	15. 51. 53, 4	20. 12. 19	13. 35, 6	16, 6
Th.	23	8. 1. 9. 52	15. 56. 6, 7	20. 24. 57	13. 19, 0	17, 4
F.	24	8. 2. 10. 36	16. 0. 20, 7	20. 37. 12	13. 1, 6	18, 2
Sa.	25	8. 3. 11. 21	16. 4. 35, 5	20. 49. 4	12. 43, 4	19, 0
Sun.	26	8. 4. 12. 8	16. 8. 51, 1	21. 0. 33	12. 24, 4	19, 8
M.	27	8. 5. 12. 56	16. 13. 7, 4	21. 11. 39	12. 4, 6	20, 4
Tu.	28	8. 6. 13. 46	16. 17. 24, 5	21. 22. 20	11. 44, 2	21, 3
W.	29	8. 7. 14. 38	16. 21. 42, 3	21. 32. 37	11. 22, 9	21, 8
Th.	30	8. 8. 15. 31	16. 26. 0, 8	21. 42. 29	11. 1, 1	

Days	Time of ☉'s Semidiam. pass ^d . Merid.	THE SUN'S			Place of the ☉'s Node.
	M. S.	Semi- diameter. M. S.	Hourly Motion. M. S.	Logar. Distance.	S. D. M.
1	1. 6, 8	16. 9, 5	2. 30, 3	9. 99624	11. 20. 16
7	1. 7, 5	16. 10, 9	2. 30, 8	9. 99560	11. 19. 57
13	1. 8, 2	16. 12, 3	2. 31, 2	9. 99500	11. 19. 38
19	1. 8, 9	16. 13, 5	2. 31, 6	9. 99445	11. 19. 19
25	1. 9, 5	16. 14, 6	2. 31, 9	9. 99397	11. 19. 0

ECLIPSES OF THE SATELLITES OF JUPITER. MEAN TIME.					
I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emersions.</i>		<i>Emersions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
*1	7. 42. 21	3	21. 10. 13	7	2. 51. 27 Im
3	2. 11. 24	*7	10. 28. 0	*7	5. 54. 3 E.
4	20. 40. 18	10	23. 46. 0	*14	6. 53. 56 Im.
6	15. 9. 21	14	13. 3. 54	*14	9. 55. 34 E.
*8	9. 38. 15	18	2. 21. 47	*21	10. 56. 35 Im.
10	4. 7. 19	21	15. 39. 41	21	13. 57. 16 E.
11	22. 36. 14	25	4. 57. 34	28	15. 0. 4 Im.
13	17. 5. 17	28	18. 15. 29	28	17. 59. 45 E.
*15	11. 34. 13				
*17	6. 3. 17				
19	0. 32. 13				
20	19. 1. 17				
22	13. 30. 13				
*24	7. 59. 17				
26	2. 28. 14				
27	20. 57. 19				
29	15. 26. 16				
				IV. Satellite.	
				15	3. 48. 40 Im.
				*15	6. 56. 29 E.

Days	THE PLANETS'							
	Heliocentric		Geocentric		Declin.	Rt. Asc.	Passage	
	Long.	Lat.	Long.	Lat.		in Time.	Merid.	
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	H. M.	
♿ MERCURY. Gr. Elong. 17 ^d .								
1	9. 9. 26	5. 37 S	7. 26. 59	2. 0 S	21. 27 S	15. 37	1. 10	
4	9. 18. 17	6. 12	8. 1. 12	2. 14	22. 36	15. 54	1. 16	
7	9. 27. 33	6. 38	8. 5. 17	2. 25	23. 35	16. 12	1. 21	
10	10. 7. 21	6. 55	8. 9. 12	2. 33	24. 23	16. 28	1. 26	
13	10. 17. 50	7. 0	8. 12. 53	2. 37	24. 58	16. 44	1. 30	
16	10. 29. 8	6. 49	8. 16. 14	2. 36	25. 20	16. 59	1. 32	
19	11. 11. 25	6. 20	8. 19. 6	2. 27	25. 28	17. 12	1. 32	
22	11. 24. 52	5. 29	8. 21. 17	2. 11	25. 21	17. 21	1. 29	
25	0. 9. 37	4. 11	8. 22. 27	1. 43	24. 58	17. 27	1. 22	
28	0. 25. 42	2. 28	8. 22. 17	1. 3	24. 17	17. 26	1. 8	
30	1. 7. 10	1. 6	8. 21. 16	0. 29	23. 39	17. 22	0. 55	
♀ VENUS.								
1	3. 7. 12	1. 17 N	5. 24. 4	1. 4 N	3. 20 N	11. 40	21. 14	
7	3. 16. 55	1. 48	6. 0. 49	1. 25	0. 58 N	12. 5	21. 15	
13	3. 26. 40	2. 15	6. 7. 41	1. 42	1. 29 S	12. 31	21. 17	
19	4. 6. 24	2. 39	6. 14. 39	1. 55	4. 1	12. 57	21. 18	
25	4. 16. 10	2. 58	6. 21. 43	2. 4	6. 34	13. 23	21. 19	
♂ MARS.								
1	8. 10. 16	0. 42 S	7. 27. 52	0. 26 S	20. 8 S	15. 42	1. 15	
7	8. 13. 33	0. 48	8. 2. 12	0. 29	21. 6	16. 0	1. 10	
13	8. 16. 52	0. 53	8. 6. 34	0. 33	21. 58	16. 18	1. 4	
19	8. 20. 13	0. 59	8. 10. 58	0. 36	22. 42	16. 37	0. 58	
25	8. 23. 36	1. 4	8. 15. 24	0. 39	23. 19	16. 56	0. 52	
♃ JUPITER.								
1	11. 22. 58	1. 16 S	11. 13. 29	1. 27 S	7. 50 S	23. 1	8. 34	
7	11. 23. 31	1. 16	11. 13. 24	1. 26	7. 51	23. 1	8. 9	
13	11. 24. 4	1. 16	11. 13. 26	1. 24	7. 49	23. 1	7. 45	
19	11. 24. 36	1. 17	11. 13. 36	1. 23	7. 44	23. 2	7. 21	
25	11. 25. 9	1. 17	11. 13. 53	1. 21	7. 36	23. 3	6. 57	
♄ SATURN.								
1	0. 11. 7	2. 27 S	0. 8. 0	2. 42 S	0. 42 N	0. 34	10. 5	
7	0. 11. 19	2. 27	0. 7. 40	2. 41	0. 35	0. 32	9. 40	
13	0. 11. 32	2. 27	0. 7. 22	2. 40	0. 29	0. 31	9. 15	
19	0. 11. 44	2. 27	0. 7. 7	2. 39	0. 24	0. 30	8. 49	
25	0. 11. 57	2. 28	0. 6. 56	2. 37	0. 21	0. 30	8. 23	
♅ GEORGIAN.								
1	8. 28. 24	0. 12 S	8. 26. 14	0. 12 S	23. 37 S	17. 44	3. 17	
11	8. 28. 31	0. 12	8. 26. 43	0. 12	23. 37	17. 46	2. 39	
21	8. 28. 38	0. 12	8. 27. 15	0. 12	23. 38	17. 48	2. 0	

Days of the Week.	Days of the Month.	THE MOON'S			
		Longitude.		Latitude.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
W.	1	5. 19. 12. 52	5. 25. 6. 24	0. 15. 29 N	0. 16. 25 S
Th.	2	6. 1. 0. 52	6. 6. 56. 43	0. 48. 12. S	1. 19. 32
F.	3	6. 12. 54. 22	6. 18. 54. 10	1. 50. 6	2. 19. 35
Sa.	4	6. 24. 56. 25	7. 1. 1. 21	2. 47. 40	3. 14. 0
Sun.	5	7. 7. 9. 9	7. 13. 19. 59	3. 38. 16	4. 0. 8
M.	6	7. 19. 33. 54	7. 25. 50. 57	4. 19. 17	4. 35. 27
Tu.	7	8. 2. 11. 8	8. 8. 34. 27	4. 48. 20	4. 57. 44
W.	8	8. 15. 0. 52	8. 21. 30. 20	5. 3. 26	5. 5. 15
Th.	9	8. 28. 2. 49	9. 4. 38. 16	5. 3. 7	4. 56. 57
F.	10	9. 11. 16. 41	9. 17. 58. 4	4. 46. 45	4. 32. 33
Sa.	11	9. 24. 42. 27	10. 1. 29. 50	4. 14. 28	3. 52. 40
Sun.	12	10. 8. 20. 17	10. 15. 13. 51	3. 27. 22	2. 58. 51
M.	13	10. 22. 10. 36	10. 29. 10. 32	2. 27. 29	1. 53. 40
Tu.	14	11. 6. 13. 37	11. 13. 19. 48	1. 17. 51	0. 40. 35 S
W.	15	11. 20. 28. 55	11. 27. 40. 45	0. 2. 27 S	0. 35. 56 N
Th.	16	0. 4. 54. 58	0. 12. 11. 5	1. 13. 55 N	1. 50. 49
F.	17	0. 19. 28. 33	0. 26. 46. 42	2. 25. 58	2. 58. 44
Sa.	18	1. 4. 4. 44	1. 11. 21. 50	3. 28. 31	3. 54. 47
Sun.	19	1. 18. 37. 9	1. 25. 49. 46	4. 17. 6	4. 35. 8
M.	20	2. 2. 58. 52	2. 10. 3. 40	4. 48. 40	4. 57. 35
Tu.	21	2. 17. 3. 30	2. 23. 57. 49	5. 1. 54	5. 1. 44
W.	22	3. 0. 46. 15	3. 7. 28. 32	4. 57. 14	4. 48. 40
Th.	23	3. 14. 4. 34	3. 20. 34. 25	4. 36. 20	4. 20. 34
F.	24	3. 26. 58. 18	4. 3. 16. 32	4. 1. 45	3. 40. 12
Sa.	25	4. 9. 29. 32	4. 15. 37. 49	3. 16. 17	2. 50. 23
Sun.	26	4. 21. 41. 58	4. 27. 42. 38	2. 22. 48	1. 53. 52
M.	27	5. 3. 40. 28	5. 9. 36. 11	1. 23. 54	0. 53. 11 N
Tu.	28	5. 15. 30. 29	5. 21. 24. 4	0. 22. 2 N	0. 9. 17 S
W.	29	5. 27. 17. 38	6. 3. 11. 50	0. 40. 29 S	1. 11. 16
Th.	30	6. 9. 7. 22	6. 15. 4. 47	1. 41. 22	2. 10. 29

Days of the Week.		Days of the Month.		THE MOON'S							
				Passage Merid.		Right Ascension.		Declination.			
						Age.		Noon.	Midn.	Noon.	Midnight.
						D.	H. M.	D. M.	D. M.	D. M.	D. M.
W.	1	27	21. 28	170. 11	175. 24	4. 31 N	1. 42 N				
Th.	2	28	22. 7	180. 37	185. 51	1. 8 S	3. 59 S				
F.	3	29	22. 48	191. 9	196. 33	6. 48	9. 34				
Sa.	4	30	23. 31	202. 4	207. 43	12. 16	14. 52				
Sun.	5	1	6	213. 33	219. 36	17. 21	19. 40				
M.	6	2	0. 18	225. 52	232. 20	21. 48	23. 42				
Tu.	7	3	1. 8	239. 2	245. 58	25. 20	26. 40				
W.	8	4	2. 3	253. 6	260. 23	27. 39	28. 16				
Th.	9	5	3. 0	267. 47	275. 15	28. 30	28. 20				
F.	10	6	3. 58	282. 43	290. 9	27. 45	26. 46				
Sa.	11	7	4. 54	297. 29	304. 41	25. 23	23. 38				
Sun.	12	8	5. 49	311. 44	318. 38	21. 32	19. 7				
M.	13	9	6. 40	325. 23	331. 59	16. 27	13. 33				
Tu.	14	10	7. 30	338. 29	344. 54	10. 27	7. 11				
W.	15	11	8. 19	351. 16	357. 38	3. 49 S	0. 23 S				
Th.	16	12	9. 7	4. 1	10. 28	3. 5 N	6. 31 N				
F.	17	13	9. 58	17. 2	23. 44	9. 53	13. 7				
Sa.	18	14	10. 51	30. 36	37. 39	16. 10	18. 58				
Sun.	19	15	11. 48	44. 53	52. 19	21. 29	23. 41				
M.	20	16	12. 47	59. 54	67. 37	25. 30	26. 54				
Tu.	21	17	13. 47	75. 24	83. 10	27. 51	28. 21				
W.	22	18	14. 46	90. 52	98. 27	28. 25	28. 3				
Th.	23	19	15. 41	105. 50	112. 59	27. 18	26. 11				
F.	24	20	16. 32	119. 52	126. 30	24. 44	23. 1				
Sa.	25	21	17. 18	132. 52	138. 59	21. 3	18. 53				
Sun.	26	22	18. 1	144. 52	150. 34	16. 33	14. 4				
M.	27	23	18. 41	156. 6	161. 30	11. 28	8. 47				
Tu.	28	24	19. 20	166. 48	172. 2	6. 3	3. 16 N				
W.	29	25	19. 59	177. 15	182. 28	0. 27 N	2. 22 S				
Th.	30	26	20. 38	187. 43	193. 2	5. 10 S	7. 57				

Days of the Week.	Days of the Month.	THE MOON'S					
		Semidiameter.		Hor. Parallax.		Proportional Logarithm.	
		<i>Noon.</i>	<i>Midn.</i>	<i>Noon.</i>	<i>Midn.</i>		
		M. S.	M. S.	M. S.	M. S.	<i>Noon.</i>	<i>Midn.</i>
W.	1	14. 45	14. 45	54. 4	54. 5	5223	5222
Th.	2	14. 46	14. 48	54. 8	54. 13	5218	5211
F.	3	14. 50	14. 52	54. 20	54. 28	5202	5191
Sa.	4	14. 54	14. 57	54. 37	54. 47	5179	5166
Sun.	5	15. 0	15. 3	54. 58	55. 10	5152	5136
M.	6	15. 6	15. 10	55. 23	55. 36	5119	5102
Tu.	7	15. 14	15. 18	55. 50	56. 4	5084	5066
W.	8	15. 22	15. 26	56. 18	56. 33	5048	5028
Th.	9	15. 30	15. 35	56. 48	57. 4	5009	4989
F.	10	15. 39	15. 43	57. 20	57. 35	4969	4950
Sa.	11	15. 47	15. 51	57. 50	58. 6	4931	4911
Sun.	12	15. 56	16. 0	58. 22	58. 37	4891	4873
M.	13	16. 4	16. 8	58. 52	59. 6	4854	4837
Tu.	14	16. 12	16. 15	59. 20	59. 32	4820	4805
W.	15	16. 18	16. 20	59. 43	59. 52	4792	4780
Th.	16	16. 22	16. 24	59. 58	60. 2	4774	4769
F.	17	16. 24	16. 23	60. 4	60. 2	4766	4769
Sa.	18	16. 22	16. 20	59. 57	59. 49	4775	4784
Sun.	19	16. 17	16. 12	59. 38	59. 23	4798	4816
M.	20	16. 8	16. 2	59. 6	58. 46	4837	4861
Tu.	21	15. 57	15. 50	58. 25	58. 2	4887	4916
W.	22	15. 44	15. 37	57. 38	57. 13	4946	4977
Th.	23	15. 30	15. 24	56. 49	56. 26	5008	5037
F.	24	15. 18	15. 12	56. 3	55. 41	5067	5095
Sa.	25	15. 7	15. 2	55. 22	55. 5	5120	5143
Sun.	26	14. 58	14. 54	54. 50	54. 37	5162	5179
M.	27	14. 51	14. 49	54. 27	54. 19	5193	5203
Tu.	28	14. 48	14. 47	54. 14	54. 11	5210	5214
W.	29	14. 47	14. 48	54. 11	54. 14	5214	5210
Th.	30	14. 49	14. 51	54. 19	54. 26	5203	5194

DISTANCES of MOON'S Centre from SUN, and from STARS EAST of her.										
Stars' Names.	Days	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .	
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	
The Sun.	1	49. 47. 6	48. 26. 17	47. 5. 26	45. 44. 33	44. 23. 39	43. 2. 43	41. 41. 44	40. 20. 43	
Fomalhaut.	8	- - -	- - -	- - -	- - -	69. 22. 24	67. 51. 19	66. 20. 11	64. 49. 1	
	9	63. 17. 51	61. 46. 42	60. 15. 36	58. 44. 33	57. 13. 36	55. 42. 42	54. 12. 0	52. 41. 26	
	10	51. 11. 6	49. 41. 0	48. 11. 11	46. 41. 42	45. 12. 33	- - -	- - -	- - -	
α Pegasi.	10	- - -	- - -	- - -	- - -	66. 24. 51	64. 51. 10	63. 17. 27	61. 43. 44	
	11	60. 10. 3	58. 36. 24	57. 2. 53	55. 29. 27	53. 56. 11	52. 23. 3	50. 50. 8	49. 17. 80	
	12	47. 45. 12	46. 13. 16	44. 41. 46	43. 10. 43	41. 49. 12	- - -	- - -	- - -	
α Arietis.	12	- - -	- - -	- - -	- - -	80. 37. 21	78. 53. 59	77. 10. 24	75. 26. 37	
	13	73. 42. 37	71. 58. 25	70. 14. 0	68. 29. 23	66. 44. 35	64. 59. 35	63. 14. 23	61. 29. 1	
	14	59. 43. 28	57. 57. 44	56. 11. 50	54. 25. 47	52. 39. 35	50. 53. 14	49. 6. 46	47. 20. 11	
Aldebaran.	15	45. 33. 30	43. 46. 44	41. 59. 54	40. 13. 0	38. 26. 3	- - -	- - -	- - -	
	15	- - -	- - -	- - -	- - -	69. 46. 18	67. 59. 37	66. 12. 50	64. 25. 59	
	16	62. 39. 6	60. 52. 11	59. 5. 15	57. 18. 19	55. 31. 26	53. 44. 36	51. 57. 48	50. 11. 9	
Pollux.	17	48. 24. 36	46. 38. 12	44. 52. 0	43. 6. 5	41. 20. 25	39. 35. 2	37. 50. 4	36. 5. 34	
	18	34. 21. 38	32. 38. 19	30. 55. 41	29. 13. 49	27. 32. 47	- - -	- - -	- - -	
	18	- - -	- - -	- - -	- - -	69. 5. 37	67. 16. 46	65. 28. 6	63. 39. 36	
Pollux.	19	61. 51. 16	60. 3. 8	58. 15. 13	56. 27. 31	54. 40. 3	52. 52. 49	51. 5. 52	49. 19. 10	
	20	47. 32. 45	45. 46. 38	44. 0. 49	42. 15. 19	40. 30. 8	38. 45. 16	37. 0. 46	35. 16. 37	
	21	33. 32. 49	31. 49. 23	30. 6. 21	28. 23. 43	26. 41. 28	- - -	- - -	- - -	

Stars' Names.	Days	Noon.		III ^a .		VI ^a .		IX ^a .		Midnight.		XV ^a .		XVIII ^a .		XXI ^a .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Regulus.	21	-	-	-	-	-	-	-	-	63. 28. 33	61. 44. 18	60. 2. 26	58. 20. 56				
	22	56. 39. 49	54. 59. 5	-	-	53. 18. 43	51. 38. 43	-	-	49. 59. 7	48. 19. 54	46. 41. 3	45. 2. 35				
	23	43. 24. 29	41. 46. 46	-	-	40. 9. 24	38. 32. 25	-	-	36. 55. 48	35. 19. 32	33. 43. 38	32. 8. 5				
	24	30. 32. 54	-	-	-	-	-	-	-	-	-	-	-				
Spica m.	24	84. 31. 40	82. 56. 42	-	-	81. 22. 2	79. 47. 42	-	-	78. 13. 42	76. 40. 0	75. 6. 35	73. 33. 28				
	25	72. 0. 38	70. 28. 5	-	-	68. 55. 48	67. 23. 46	-	-	65. 52. 0	64. 20. 28	62. 49. 9	61. 18. 4				
	26	59. 47. 12	58. 16. 32	-	-	56. 46. 4	55. 15. 46	-	-	53. 45. 40	52. 15. 44	50. 45. 53	49. 16. 16				
	27	47. 46. 46	46. 17. 23	-	-	44. 43. 6	43. 18. 55	-	-	41. 49. 50	-	-	-				
The Sun.	24	-	-	-	-	-	-	120. 46. 28	119. 20. 28	118. 13. 42	117. 54. 46	116. 29. 20	115. 4. 12				
	25	113. 39. 21	112. 14. 46	-	-	110. 50. 27	109. 26. 22	108. 2. 33	106. 38. 58	105. 15. 36	103. 52. 27	102. 28. 31	101. 6. 47				
	26	102. 29. 31	101. 6. 47	-	-	99. 44. 14	98. 21. 51	96. 59. 40	95. 37. 38	94. 15. 46	92. 54. 1	91. 32. 26	90. 10. 58				
	27	91. 32. 26	90. 10. 58	-	-	88. 49. 36	87. 28. 21	86. 7. 12	84. 46. 8	83. 25. 7	82. 4. 11	80. 43. 18	79. 22. 28				
	28	80. 43. 18	79. 22. 28	-	-	78. 1. 40	76. 40. 53	75. 20. 8	73. 59. 23	72. 38. 38	71. 17. 52	69. 57. 5	68. 36. 17				
	29	69. 57. 5	68. 36. 17	-	-	67. 15. 26	65. 54. 32	64. 33. 36	63. 12. 35	61. 51. 29	60. 30. 18	59. 9. 3	57. 47. 42				
	30	59. 9. 3	57. 47. 42	-	-	56. 26. 15	55. 4. 41	53. 43. 1	52. 21. 14	50. 59. 18	49. 37. 15	-	-				
	D. 1	48. 15. 3	-	-	-	-	-	-	-	-	-	-	-				

DISTANCES of MOON'S Centre from SUN, and from STARS WEST of her.

Stars' Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Regulus.	1	21.	52. 41	23.	21. 7	24.	49. 36	26.	18. 9	27.	46. 46	29.	15. 27	30.	44. 14	32.	13. 6
	2	33.	42. 2	35.	11. 4	36.	40. 12	38.	9. 26	39.	38. 46	41.	8. 12	42.	37. 46	44.	7. 26
	3	45.	37. 14	47.	7. 9	48.	37. 13	50.	7. 24	51.	37. 44	-	-	-	-	-	-
The Sun.	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39.	46. 3
	9	41.	15. 58	42.	46. 6	44.	16. 26	45.	47. 0	47.	17. 47	48.	48. 47	50.	19. 59	51.	51. 24
	10	53.	23. 2	54.	54. 52	56.	26. 55	57.	59. 12	59.	31. 40	61.	4. 21	62.	37. 15	64.	10. 22
	11	65.	43. 42	67.	17. 14	68.	51. 0	70.	24. 59	71.	59. 10	73.	33. 35	75.	8. 13	78.	43. 4
	12	78.	18. 8	79.	53. 25	81.	28. 56	83.	4. 39	84.	40. 36	86.	16. 46	87.	53. 10	89.	29. 46
	13	91.	6. 36	92.	43. 39	94.	20. 55	95.	58. 24	97.	36. 6	99.	14. 1	100.	52. 8	102.	30. 27
	14	104.	8. 59	105.	47. 43	107.	26. 38	109.	5. 44	110.	45. 2	112.	24. 31	114.	4. 10	115.	44. 0
	15	117.	23. 59	119.	4. 8	120.	44. 25	-	-	-	-	-	-	-	-	-	-
Antares.	12	-	-	-	-	-	-	-	-	67.	49. 28	69.	33. 30	71.	17. 45	73.	2. 13
	13	74.	46. 55	76.	31. 50	78.	16. 58	80.	2. 19	81.	47. 53	83.	33. 40	85.	19. 39	87.	5. 52
	14	88.	52. 18	90.	38. 56	92.	25. 46	94.	12. 48	96.	0. 2	97.	47. 27	99.	35. 4	101.	22. 52
	15	103.	10. 50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
α Aquilæ.	15	56.	56. 2	58.	18. 18	59.	41. 33	61.	5. 42	62.	30. 43	63.	56. 32	65.	23. 6	66.	50. 21
	16	68.	18. 13	69.	46. 40	71.	15. 37	72.	45. 2	74.	14. 51	-	-	-	-	-	-
Fomalhaut.	16	-	-	-	-	-	-	-	-	46.	4. 27	47.	42. 8	49.	20. 29	50.	59. 24
	17	52.	38. 52	54.	18. 49	55.	59. 12	57.	39. 59	59.	21. 5	61.	2. 26	62.	44. 2	64.	25. 50
	18	66.	7. 47	67.	49. 52	69.	32. 2	71.	14. 14	72.	56. 27	-	-	-	-	-	-

[illegible]

CONFIGURATIONS of the SATELLITES of JUPITER,
at VII o'Clock in the *Evening*.

1	4°	3	2	○		1.●
2	4°	3		○	+1 2	
3	4°		1°	○	2°	
4		4°	2°	○	1 3	
5			4° 1 2	○		3°
6				○	1° 2 3	4○
7	2.●		1 3	○	4°	
8	1.●	3°	2°	○		4°
9		3°		○	1 2	4°
10			3° 1°	○	2°	4°
11			2°	○	1 3	4°
12			1 2	○		3 4°
13				○	1° 2° 3° 4°	
14			1 3	○	2 3 4	
15		3° 2° 4°		○	1°	
16		1° 3		○	2	1○
17	4°		3° 1°	○	2°	
18	4°		2°	○	1 3	
19	4°		1 2	○		3
20	4°			○	1° 2° 3°	
21		4°	1	○	2°	3.●
22			3° 2° 4°	○	1°	
23	1○	3°		○	4°	2○
24	1.●		3°	○	2° 4°	
25			2°	○	1 3	4°
26			2° 1°	○		3 4°
27				○	1 2	3° 4°
28			1	○	3° 2°	4°
29			3° 2°	○	1°	4°
30	2○	3	1	○		4°

Days of the Week.	Days of the Month.	<i>Sundays, Holidays, Terms, &c.</i>	<i>Phases of the MOON.</i>
F.	1		D. H. M.
Sa.	2		● New Moon - - - 5. 4. 10
			☾ First Quarter - - 12. 6. 5
			○ Full Moon - - - 19. 4. 5
			☾ Last Quarter - - 27. 1. 16
			<i>Other Phenomena.</i>
Sun.	3	<i>Advent Sunday.</i>	D. H. M.
M.	4		1. 0. 31 ☾ α ♉.
Tu.	5		4. 16. 40 ☾ α ♏.
W.	6	Nicholas.	10. - - ♄ Stationary.
Th.	7		11. 20. 50 ☾ ♃.
F.	8	Concept. of B. V. Mary.	12. 10. 53 ☿ ♈, ☿ 35' $\frac{1}{2}$ S. of ♈.
Sa.	9		16. - - ☿ Stationary.
			18. 14. 35 ☾ β ♌.
Sun.	10	<i>2d Sunday in Advent.</i>	20. 21. 36 ☾ Pollux.
M.	11		21. 8. 50 ☉ enters ♍.
Tu.	12		23. 19. 38 ☾ α ♏.
W.	13	Lucy.	28. 8. 43 ☾ α ♏.
Th.	14		
F.	15		
Sa.	16	O. Sap. Cam. Term ends.	
Sun.	17	<i>3d Sunday in Advent.</i>	
M.	18	Oxford Term ends.	
Tu.	19		
W.	20		
Th.	21	<i>St. Thomas.</i>	
F.	22		
Sa.	23		
Sun.	24	<i>4th Sunday in Advent.</i>	
M.	25	<i>Christmas Day.</i>	
Tu.	26	<i>St. Stephen.</i>	
W.	27	<i>St. John.</i>	
Th.	28	<i>Innocents.</i>	
F.	29		
Sa.	30		
Sun.	31	<i>1st Sun. after Christmas.</i> [Silvester.]	

Days of the Week.	Days of the Month.	THE SUN'S			Equation of Time. <i>Sub. from app. Time.</i>	Diff.
		Longitude.	Rt. Ascen. <i>in Time.</i>	Declin. <i>South.</i>		
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
F.	1	8. 9. 16. 26	16. 30. 20, 0	21. 51. 57	10. 38, 5	23, 2
Sa.	2	8. 10. 17. 21	16. 34. 39, 9	22. 0. 59	10. 15, 3	23, 9
Sun.	3	8. 11. 18. 19	16. 39. 0, 4	22. 9. 36	9. 51, 4	24, 4
M.	4	8. 12. 19. 17	16. 43. 21, 4	22. 17. 47	9. 27, 0	25, 1
Tu.	5	8. 13. 20. 16	16. 47. 43, 1	22. 25. 32	9. 1, 9	25, 5
W.	6	8. 14. 21. 17	16. 52. 5, 3	22. 32. 51	8. 36, 4	26, 1
Th.	7	8. 15. 22. 18	16. 56. 28, 0	22. 39. 44	8. 10, 3	26, 6
F.	8	8. 16. 23. 20	17. 0. 51, 2	22. 46. 9	7. 43, 7	27, 0
Sa.	9	8. 17. 24. 23	17. 5. 14, 9	22. 52. 8	7. 16, 7	27, 5
Sun.	10	8. 18. 25. 27	17. 9. 39, 0	22. 57. 39	6. 49, 2	27, 8
M.	11	8. 19. 26. 31	17. 14. 3, 4	23. 2. 44	6. 21, 4	28, 1
Tu.	12	8. 20. 27. 35	17. 18. 28, 2	23. 7. 20	5. 53, 3	28, 5
W.	13	8. 21. 28. 39	17. 22. 53, 3	23. 11. 30	5. 24, 8	28, 7
Th.	14	8. 22. 29. 44	17. 27. 18, 7	23. 15. 11	4. 56, 1	29, 0
F.	15	8. 23. 30. 49	17. 31. 44, 3	23. 18. 25	4. 27, 1	29, 2
Sa.	16	8. 24. 31. 55	17. 36. 10, 1	23. 21. 10	3. 57, 9	29, 4
Sun.	17	8. 25. 33. 1	17. 40. 36, 2	23. 23. 28	3. 28, 5	29, 6
M.	18	8. 26. 34. 7	17. 45. 2, 4	23. 25. 17	2. 58, 9	29, 7
Tu.	19	8. 27. 35. 14	17. 49. 28, 8	23. 26. 38	2. 29, 2	29, 9
W.	20	8. 28. 36. 21	17. 53. 55, 2	23. 27. 31	1. 59, 3	29, 9
Th.	21	8. 29. 37. 29	17. 58. 21, 8	23. 27. 55	1. 29, 4	29, 9
F.	22	9. 0. 38. 37	18. 2. 48, 4	23. 27. 52	0. 59, 5	30, 0
Sa.	23	9. 1. 39. 46	18. 7. 15, 0	23. 27. 20	0. 29, 5	30, 0
Sun.	24	9. 2. 40. 55	18. 11. 41, 6	23. 26. 19	<i>Add.</i> 0, 5	29, 9
M.	25	9. 3. 42. 5	18. 16. 8, 2	23. 24. 51	0. 30, 4	29, 8
Tu.	26	9. 4. 43. 15	18. 20. 34, 6	23. 22. 54	1. 0, 2	29, 7
W.	27	9. 5. 44. 26	18. 25. 1, 0	23. 20. 28	1. 29, 9	29, 6
Th.	28	9. 6. 45. 37	18. 29. 27, 2	23. 17. 35	1. 59, 5	29, 4
F.	29	9. 7. 46. 48	18. 33. 53, 2	23. 14. 14	2. 28, 9	29, 2
Sa.	30	9. 8. 48. 0	18. 38. 19, 1	23. 10. 24	2. 58, 1	28, 9
Sun.	31	9. 9. 49. 12	18. 42. 44, 6	23. 6. 7	3. 27, 0	

Days	Time of ☉'s Semidiam. pass ^d . Merid.	THE SUN'S			Place of the D's Node.
	M. S.	Semidia- meter. M. S.	Hourly Motion. M. S.	Logar. Distance.	S. D. M.
1	1. 10, 0	16. 15, 5	2. 32, 2	9. 99354	11. 18. 41
7	1. 10, 5	16. 16, 3	2. 32, 5	9. 99319	11. 18. 22
13	1. 10, 8	16. 17, 0	2. 32, 7	9. 99291	11. 18. 3
19	1. 10, 9	16. 17, 4	2. 32, 8	9. 99271	11. 17. 44
25	1. 11, 0	16. 17, 7	2. 32, 9	9. 99259	11. 17. 25

ECLIPSES OF THE SATELLITES OF JUPITER. MEAN TIME.					
I. Satellite.		II. Satellite.		III. Satellite.	
<i>Emersions.</i>		<i>Emersions.</i>			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
*1	9. 55. 21	*2	7. 33. 23	5	19. 3. 11 Im.
3	4. 24. 16	5	20. 51. 19	5	22. 1. 59 E.
4	22. 53. 22	*9	10. 9. 15	12	23. 6. 55 Im.
6	17. 22. 18	12	23. 27. 8	13	2. 4. 40 E.
8	11. 51. 23	16	12. 45. 7	20	3. 9. 45 Im.
*10	6. 20. 19	20	2. 3. 2	*20	6. 6. 34 E.
12	0. 49. 24	23	15. 21. 1	*27	7. 12. 28 Im.
13	19. 18. 20	27	4. 38. 55	27	10. 8. 12 E.
15	13. 47. 25	30	17. 56. 56		
*17	8. 16. 21				
19	2. 45. 26				
20	21. 14. 22				
22	15. 43. 26				
24	10. 12. 22				
26	4. 41. 26				
27	23. 10. 21				
29	17. 39. 25				
31	12. 8. 19				
				IV. Satellite.	
				1	22. 11. 3 Im.
				2	1. 8. 28 E.
				18	16. 33. 55 Im.
				18	19. 20 6 E.

Days	THE PLANETS'							
	Heliocentric		Geocentric		Declin.	Rt. Asc. in Time.	Passage Merid.	
	Long.	Lat.	Long.	Lat.				
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	H. M.	
♂ Gr. Elong. 26 ^d . <i>MERCURY.</i> Inf. ♂ 6 ^d . 1 ^h .								
1	1. 13. 6	0. 23 S	8. 20. 29	0. 10 S	23. 17 S	17. 19	0. 48	
4	2. 1. 29	1. 51 N	8. 17. 11	0. 50 N	22. 1	17. 5	0. 21	
7	2. 20. 24	3. 57	8. 13. 6	1. 47	20. 37	16. 48	23. 42	
10	3. 9. 10	5. 36	8. 9. 24	2. 29	19. 26	16. 32	23. 15	
13	3. 27. 11	6. 37	8. 7. 1	2. 51	18. 42	16. 23	22. 55	
16	4. 14. 0	7. 0	8. 6. 16	2. 54	18. 31	16. 20	22. 40	
19	4. 29. 23	6. 49	8. 6. 59	2. 44	18. 48	16. 23	22. 31	
22	5. 13. 21	6. 14	8. 8. 49	2. 26	19. 23	16. 30	22. 26	
25	5. 26. 25	5. 23	8. 11. 28	2. 4	20. 8	16. 41	22. 25	
28	6. 7. 37	4. 23	8. 14. 40	1. 39	20. 57	16. 54	22. 25	
31	6. 18. 17	3. 17	8. 18. 15	1. 13	21. 44	17. 9	22. 28	
♀ <i>VENUS.</i>								
1	4. 25. 55	3. 12 N	6. 28. 51	2. 8 N	9. 5 S	13. 50	21. 20	
7	5. 5. 40	3. 21	7. 6. 3	2. 9	11. 31	14. 18	21. 22	
13	5. 15. 25	3. 24	7. 13. 18	2. 7	13. 50	14. 46	21. 23	
19	5. 25. 9	3. 20	7. 20. 35	2. 1	15. 58	15. 15	21. 26	
25	6. 4. 52	3. 12	7. 27. 55	1. 52	17. 54	15. 44	21. 29	
♂ <i>MARS.</i>								
1	8. 27. 1	1. 10 S	8. 19. 52	0. 42 S	23. 47 S	17. 16	0. 45	
7	9. 0. 28	1. 15	8. 24. 22	0. 45	24. 6	17. 35	0. 39	
13	9. 3. 57	1. 20	8. 28. 54	0. 48	24. 15	17. 55	0. 32	
19	9. 7. 28	1. 24	9. 3. 27	0. 50	24. 15	18. 15	0. 26	
25	9. 11. 1	1. 29	9. 8. 2	0. 53	24. 6	18. 35	0. 19	
♃ <i>JUPITER.</i> ☐ 6 ^d . 9 ^h .								
1	11. 25. 42	1. 17 S	11. 14. 17	1. 20 S	7. 25 S	23. 4	6. 33	
7	11. 26. 15	1. 17	11. 14. 48	1. 19	7. 12	23. 6	6. 9	
13	11. 26. 48	1. 17	11. 15. 25	1. 17	6. 56	23. 8	5. 44	
19	11. 27. 21	1. 18	11. 16. 8	1. 16	6. 38	23. 11	5. 21	
25	11. 27. 54	1. 18	11. 16. 57	1. 15	6. 18	23. 14	4. 57	
♄ <i>SATURN.</i> ☐ 28 ^d . 7 ^h .								
1	0. 12. 9	2. 28 S	0. 6. 49	2. 36 S	0. 19 N	0. 29	7. 57	
7	0. 12. 21	2. 28	0. 6. 45	2. 34	0. 19	0. 29	7. 31	
13	0. 12. 34	2. 28	0. 6. 46	2. 33	0. 21	0. 29	7. 5	
19	0. 12. 46	2. 28	0. 6. 50	2. 31	0. 24	0. 29	6. 38	
25	0. 12. 58	2. 28	0. 6. 58	2. 30	0. 29	0. 30	6. 12	
♅ <i>GEORGIAN.</i> ♂ 20 ^d . 8 ^h .								
1	8. 28. 45	0. 13 S	8. 27. 49	0. 12 S	23. 39 S	17. 50	1. 20	
11	8. 28. 52	0. 13	8. 28. 24	0. 12	23. 39	17. 53	0. 39	
21	8. 28. 58	0. 13	8. 29. 0	0. 12	23. 40	17. 56	23. 53	
31	8. 29. 5	0. 13	8. 29. 36	0. 12	23. 40	17. 58	23. 11	

Days of the Week.	Days of the Month.	THE MOON'S					
		Longitude.			Latitude.		
		Noon.			Midnight.		
		S. D. M. S.	S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.	D. M. S.
F.	1	6. 21. 4. 38	6. 27. 7. 25	2. 38. 20 S	3. 4. 34 S		
Sa.	2	7. 3. 13. 33	7. 9. 23. 23	3. 28. 55	3. 51. 1		
Sun.	3	7. 15. 37. 12	7. 21. 55. 9	4. 10. 34	4. 27. 15		
M.	4	7. 28. 17. 20	8. 4. 48. 44	4. 40. 48	4. 50. 55		
Tu.	5	8. 11. 14. 16	8. 17. 48. 48	4. 57. 21	4. 59. 54		
W.	6	8. 24. 27. 4	9. 1. 8. 47	4. 58. 26	4. 52. 52		
Th.	7	9. 7. 53. 38	9. 14. 41. 17	4. 43. 9	4. 29. 21		
F.	8	9. 21. 31. 24	9. 28. 23. 39	4. 11. 36	3. 50. 5		
Sa.	9	10. 5. 17. 43	10. 12. 13. 22	3. 25. 5	2. 56. 57		
Sun.	10	10. 19. 10. 23	10. 26. 8. 36	2. 26. 3	1. 52. 50		
M.	11	11. 3. 7. 54	11. 10. 8. 11	1. 17. 50	0. 41. 32 S		
Tu.	12	11. 17. 9. 26	11. 24. 11. 34	0. 4. 30 S	0. 32. 40 N		
W.	13	0. 1. 14. 30	0. 8. 18. 11	1. 9. 24 N	1. 45. 7		
Th.	14	0. 15. 22. 29	0. 22. 27. 13	2. 19. 15	2. 51. 15		
F.	15	0. 29. 32. 7	1. 6. 36. 52	3. 20. 35	3. 46. 48		
Sa.	16	1. 13. 41. 6	1. 20. 44. 19	4. 9. 27	4. 28. 12		
Sun.	17	1. 27. 46. 2	2. 4. 45. 42	4. 42. 48	4. 53. 5		
M.	18	2. 11. 42. 45	2. 18. 36. 38	4. 58. 55	5. 0. 19		
Tu.	19	2. 25. 26. 50	3. 2. 12. 54	4. 57. 23	4. 50. 16		
W.	20	3. 8. 54. 27	3. 15. 31. 11	4. 39. 11	4. 24. 26		
Th.	21	3. 22. 2. 56	3. 28. 29. 39	4. 6. 22	3. 45. 20		
F.	22	4. 4. 51. 21	4. 11. 8. 12	3. 21. 42	2. 55. 52		
Sa.	23	4. 17. 20. 27	4. 23. 28. 28	2. 28. 12	1. 59. 4		
Sun.	24	4. 29. 32. 41	5. 5. 33. 36	1. 28. 50	0. 57. 50 N		
M.	25	5. 11. 31. 49	5. 17. 27. 56	0. 26. 24 N	0. 5. 10 S		
Tu.	26	5. 23. 22. 37	5. 29. 16. 32	0. 36. 34 S	1. 7. 32		
W.	27	6. 5. 10. 24	6. 11. 4. 54	1. 37. 46	2. 7. 1		
Th.	28	6. 17. 0. 45	6. 22. 58. 37	2. 34. 59	3. 1. 24		
F.	29	6. 28. 59. 9	7. 5. 2. 59	3. 26. 0	3. 48. 29		
Sa.	30	7. 11. 10. 40	7. 17. 22. 43	4. 8. 35	4. 25. 58		
Sun.	31	7. 23. 39. 33	8. 0. 1. 27	4. 40. 22	4. 51. 29		

Days of the Week.	Days of the Month.	THE MOON'S					
		Age.	Passage Merid.	Right Ascension.		Declination.	
				Noon.	Midnight	Noon.	Midnight.
				D. M.	D. M.	D. M.	D. M.
F.	1	27	21. 20	198. 23	204. 2	10. 41 S	13. 20 S
Sa.	2	28	22. 5	209. 46	215. 42	15. 52	18. 17
Sun.	3	29	22. 54	221. 51	228. 15	20. 32	22. 34
M.	4	30	23. 47	234. 54	241. 48	24. 22	25. 52
Tu.	5	1	6	248. 55	256. 14	27. 3	27. 53
W.	6	2	0. 45	263. 43	271. 18	28. 19	28. 20
Th.	7	3	1. 43	278. 55	286. 30	27. 56	27. 7
F.	8	4	2. 41	294. 0	301. 22	25. 53	24. 16
Sa.	9	5	3. 37	308. 33	315. 34	22. 17	19. 59
Sun.	10	6	4. 29	322. 24	329. 3	17. 24	14. 35
M.	11	7	5. 18	335. 33	341. 56	11. 35	8. 25
Tu.	12	8	6. 6	348. 13	354. 27	5. 9 S	1. 49 S
W.	13	9	6. 53	0. 41	6. 56	1. 33 N	4. 54 N
Th.	14	10	7. 41	13. 15	19. 41	8. 12	11. 24
F.	15	11	8. 31	26. 15	32. 59	14. 27	17. 19
Sa.	16	12	9. 24	39. 54	47. 1	19. 56	22. 16
Sun.	17	13	10. 21	54. 20	61. 49	24. 16	25. 55
M.	18	14	11. 20	69. 26	77. 8	27. 9	27. 58
Tu.	19	15	12. 19	84. 51	92. 30	28. 20	28. 17
W.	20	16	13. 16	100. 3	107. 25	27. 49	26. 57
Th.	21	17	14. 9	114. 33	121. 27	25. 43	24. 10
F.	22	18	14. 58	128. 5	134. 27	22. 20	20. 16
Sa.	23	19	15. 43	140. 35	146. 29	18. 0	15. 35
Sun.	24	20	16. 24	152. 11	157. 44	13. 2	10. 23
M.	25	21	17. 3	163. 8	168. 26	7. 40	4. 53 N
Tu.	26	22	17. 42	173. 41	178. 53	2. 4 N	0. 45 S
W.	27	23	18. 20	184. 6	189. 21	3. 33 S	6. 20
Th.	28	24	19. 1	194. 40	200. 6	9. 5	11. 45
F.	29	25	19. 44	205. 41	211. 26	14. 20	16. 48
Sa.	30	26	20. 31	217. 23	223. 34	19. 8	21. 17
Sun.	31	27	21. 22	230. 0	236. 42	23. 14	24. 55

Days of the Week.	Days of the Month.	THE MOON'S				Proportional Logarithm.	
		Semidiameter.		Hor. Parallax.			
		Noon.	Midnight	Noon.	Midnight		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
F.	1	14. 54	14. 57	54. 36	54. 46	5181	5108
Sa.	2	15. 0	15. 4	54. 59	55. 13	5150	5132
Sun.	3	15. 8	15. 12	55. 28	55. 44	5112	5092
M.	4	15. 17	15. 22	56. 1	56. 18	5070	5048
Tu.	5	15. 26	15. 30	56. 35	56. 51	5026	5005
W.	6	15. 35	15. 40	57. 7	57. 22	4985	4966
Th.	7	15. 44	15. 48	57. 37	57. 51	4947	4930
F.	8	15. 51	15. 54	58. 4	58. 15	4913	4900
Sa.	9	15. 57	16. 0	58. 25	58. 35	4887	4875
Sun.	10	16. 2	16. 4	58. 44	58. 51	4864	4855
M.	11	16. 5	16. 7	58. 57	59. 2	4848	4842
Tu.	12	16. 8	16. 9	59. 7	59. 10	4836	4832
W.	13	16. 10	16. 10	59. 13	59. 14	4828	4827
Th.	14	16. 9	16. 9	59. 14	59. 12	4827	4830
F.	15	16. 9	16. 8	59. 9	59. 5	4833	4838
Sa.	16	16. 6	16. 3	58. 50	58. 51	4845	4855
Sun.	17	16. 0	15. 57	58. 41	58. 29	4868	4882
M.	18	15. 54	15. 50	58. 15	58. 0	4900	4918
Tu.	19	15. 45	15. 40	57. 43	57. 25	4940	4962
W.	20	15. 35	15. 30	57. 6	56. 47	4986	5011
Th.	21	15. 25	15. 20	56. 28	56. 9	5035	5059
F.	22	15. 14	15. 9	55. 50	55. 32	5084	5107
Sa.	23	15. 5	15. 1	55. 15	55. 0	5129	5149
Sun.	24	14. 57	14. 54	54. 46	54. 35	5168	5182
M.	25	14. 51	14. 49	54. 26	54. 19	5194	5203
Tu.	26	14. 48	14. 48	54. 15	54. 13	5209	5211
W.	27	14. 48	14. 49	54. 14	54. 17	5210	5206
Th.	28	14. 51	14. 53	54. 23	54. 32	5198	5186
F.	29	14. 56	15. 0	54. 43	54. 57	5172	5153
Sa.	30	15. 4	15. 9	55. 13	55. 30	5133	5110
Sun.	31	15. 14	15. 20	55. 49	56. 9	5085	5059

DISTANCES of MOON'S Centre from SUN, and from STARS EAST of her.

Stars' Names.	Days	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	1	48. 15. 3	46. 52. 44	45. 30. 15	44. 7. 38	42. 44. 51	41. 21. 55	39. 58. 50	38. 35. 35
α Pegasi.	8	63. 1. 47	61. 26. 22	59. 51. 1	58. 15. 45	56. 40. 39	55. 5. 44	53. 31. 3	51. 56. 38
	9	50. 22. 33	48. 48. 46	47. 15. 24	45. 42. 33	44. 10. 15	42. 36. 35	41. 7. 37	39. 37. 26
	10	38. 8. 4	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Arietis.	10	76. 39. 6	74. 55. 5	73. 10. 59	71. 26. 49	69. 42. 35	67. 58. 16	66. 13. 54	64. 29. 29
	11	62. 45. 0	61. 0. 28	59. 15. 53	57. 31. 16	55. 46. 37	54. 1. 55	52. 17. 13	50. 32. 30
	12	48. 47. 47	47. 3. 3	45. 18. 21	43. 33. 41	41. 49. 3	40. 4. 27	38. 19. 56	36. 35. 31
	13	34. 51. 13	33. 7. 4	31. 23. 4	29. 39. 16	27. 55. 40	- - -	- - -	- - -
Aldebaran.	13	- - -	- - -	- - -	- - -	59. 21. 27	57. 37. 35	55. 53. 45	54. 10. 0
	14	52. 26. 22	50. 42. 51	48. 59. 29	47. 16. 19	45. 33. 19	43. 50. 31	42. 7. 59	40. 25. 46
	15	38. 43. 52	37. 2. 22	35. 21. 17	33. 40. 41	32. 0. 35	- - -	- - -	- - -
Pollux.	15	- - -	- - -	- - -	- - -	73. 49. 29	72. 3. 31	70. 17. 38	68. 31. 50
	16	66. 46. 6	65. 0. 28	63. 14. 55	61. 29. 29	59. 44. 10	57. 58. 57	56. 13. 52	54. 28. 56
	17	52. 44. 7	50. 59. 28	49. 14. 58	47. 30. 38	45. 46. 29	44. 2. 30	42. 18. 44	40. 35. 10
	18	38. 51. 48	37. 8. 39	35. 25. 45	33. 43. 5	32. 0. 39	- - -	- - -	- - -
Regulus.	18	- - -	- - -	- - -	- - -	68. 46. 32	67. 4. 2	65. 21. 47	63. 39. 46
	19	61. 58. 0	60. 16. 29	58. 35. 13	56. 54. 13	55. 13. 29	53. 33. 1	51. 52. 50	50. 12. 56
	20	48. 33. 18	46. 53. 58	45. 14. 55	43. 36. 11	41. 57. 43	40. 19. 34	38. 41. 42	37. 4. 8
	21	35. 26. 52	33. 49. 54	32. 13. 13	30. 36. 51	29. 0. 47	- - -	- - -	- - -

Stars' Names.	Days	Noon.		III ^h .		VI ^h .		IX ^h .		Midnight.		XV ^h .		XVIII ^h .		XXI ^h .	
		D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.	D.	M. S.
Spica π .	21	-	-	-	-	-	-	-	-	83.	0. 8	81.	24. 17	79.	48. 43	78.	13. 27
	22	76.	38. 29	75.	3. 48	73.	29. 22	71.	55. 14	70.	21. 22	68.	47. 47	67.	14. 26	65.	41. 22
	23	64.	8. 33	62.	35. 59	61.	3. 29	59.	31. 33	57.	59. 42	56.	28. 5	54.	56. 40	53.	25. 27
	24	51.	54. 28	50.	23. 40	48.	53. 3	47.	22. 37	45.	52. 22	44.	22. 17	42.	52. 20	41.	22. 33
	25	39.	52. 54	38.	23. 23	36.	53. 53	35.	24. 41	33.	55. 30	-	-	-	-	-	-
Antares.	25	-	-	-	-	-	-	-	-	79.	49. 6	78.	19. 59	76.	50. 56	75.	21. 57
	26	73.	53. 8	72.	24. 12	70.	55. 23	69.	26. 35	67.	57. 50	66.	29. 5	65.	0. 20	63.	31. 34
	27	62.	2. 48	60.	34. 0	59.	5. 9	57.	36. 15	56.	7. 18	-	-	-	-	-	-
The Sun.	24	-	-	-	-	120.	22. 14	118.	59. 51	117.	37. 39	116.	15. 36	114.	53. 40	113.	31. 53
	25	112.	10. 14	110.	48. 42	109.	27. 17	108.	5. 57	106.	44. 44	105.	23. 36	104.	2. 32	102.	41. 32
	26	101.	20. 36	99.	59. 43	98.	38. 51	97.	18. 2	95.	57. 14	94.	36. 27	93.	15. 30	91.	54. 50
	27	90.	34. 1	89.	13. 10	87.	52. 16	86.	31. 19	85.	10. 19	83.	49. 15	82.	28. 5	81.	6. 50
	28	79.	45. 30	78.	24. 3	77.	2. 28	75.	40. 46	74.	18. 56	72.	56. 57	71.	34. 49	70.	12. 31
	29	68.	50. 3	67.	27. 24	66.	4. 33	64.	41. 36	63.	18. 15	61.	54. 47	60.	31. 6	59.	7. 11
	30	57.	43. 2	56.	18. 39	54.	54. 0	53.	29. 6	52.	3. 57	50.	38. 31	49.	12. 49	47.	46. 51
	31	46.	20. 36	44.	54. 5	43.	27. 17	42.	0. 13	40.	32. 52	-	-	-	-	-	-

Stars' Names.	Days	Noon.	III ^h .	VI ^h .	IX ^h .	Midnight.	XV ^h .	XVIII ^h .	XXI ^h .
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Arietis.	18	36. 33. 23	38. 15. 8	39. 56. 46	41. 38. 18	43. 19. 42	45. 0. 58	46. 42. 4	48. 23. 0
	19	50. 3. 46	51. 44. 19	53. 24. 40	55. 4. 48	56. 44. 42	58. 24. 22	60. 3. 47	61. 42. 57
	20	63. 21. 52	65. 0. 32	66. 38. 55	68. 17. 2	69. 54. 53	-	-	-
Aldebaran.	20	-	-	-	-	39. 26. 12	41. 0. 29	42. 34. 44	44. 8. 54
	21	45. 42. 58	47. 16. 56	48. 50. 45	50. 24. 26	51. 57. 58	53. 31. 18	55. 4. 27	56. 37. 25
	22	58. 10. 11	59. 42. 45	61. 15. 6	62. 47. 15	64. 19. 11	65. 50. 54	67. 22. 24	68. 53. 41
Pollux.	23	70. 24. 46	71. 55. 38	73. 26. 17	74. 56. 44	76. 26. 58	-	-	-
	23	-	-	-	-	32. 57. 12	34. 28. 34	35. 59. 44	37. 30. 43
	24	39. 1. 30	40. 32. 6	42. 2. 32	43. 32. 48	45. 2. 54	46. 32. 51	48. 2. 39	49. 32. 20
Regulus.	25	51. 1. 52	52. 31. 16	54. 0. 34	55. 29. 46	56. 58. 52	58. 27. 52	59. 56. 48	61. 25. 41
	26	62. 54. 29	64. 23. 14	65. 51. 57	67. 20. 39	68. 49. 19	70. 17. 58	71. 46. 38	73. 15. 19
	27	74. 44. 0	-	-	-	-	-	-	-
Spica m.	27	37. 52. 56	39. 21. 41	40. 50. 29	42. 19. 21	43. 48. 16	45. 17. 15	46. 46. 20	48. 15. 30
	28	49. 44. 46	51. 14. 8	52. 43. 39	54. 13. 17	55. 43. 3	57. 12. 58	58. 43. 3	60. 13. 19
	29	61. 43. 44	63. 14. 21	64. 45. 10	66. 16. 12	67. 47. 26	69. 18. 53	70. 50. 35	72. 22. 32
J. 1	30	73. 54. 42	-	-	-	-	-	-	-
	30	19. 54. 57	21. 27. 19	22. 59. 57	24. 32. 53	26. 6. 5	27. 39. 34	29. 13. 21	30. 47. 26
	31	32. 21. 49	33. 56. 30	35. 31. 30	37. 6. 49	38. 42. 27	40. 18. 23	41. 54. 40	43. 31. 16

CONFIGURATIONS OF THE SATELLITES OF JUPITER
at VI o'Clock in the *Evening*.

1	4.●	·3	○	·2	1.●
2		4·	2·○·3		·1○
3		3·	·2	1·○	·3
4	4·		○	1 6 2	3·
5	4·		1·○	3·2·	
6	·4	2 6 3	○	1·	
7	·4	3·	·1·2	○	
8		·4·3	○	1·	·2
9	·1○		·4	○	·3○2·●
10		2·	1·○	3 6 4	
11			○	1 6 2	3 6 4
12		·1	○	2 6 3	·4
13		2 6 3	○	·1	·4
14		3·	1 6 2	○	3·
15		·3	○	1·	·2
16			1 6 3○2·	4·	
17	1.●	2·	○	4·	·3
18			4·○1 6 2	3·	
19		4·	1·○	2 6 3	
20		4·	2·3·○	·1	
21	4·	3·	1 6 2	○	
22	·4	·3	○	1·	·2
23	·4	·3	·1	○	2·
24	·4	2·	○	·3	1.●
25	·2○	·4	○	·3	·1○
26			1··4	○	2·3·
27			0·3·○	·1	·4
28		3·	·2	1·○	·4
29		·3	○	1 6 2	·4
30		·3	·1	○	2·
31		2·	○	1·	·3

EXPLANATION AND USE

OF THE

ARTICLES

CONTAINED IN THE

ASTRONOMICAL AND NAUTICAL EPHEMERIS.

IT may be proper first to premise, that all the Calculations of the *Ephemeris*, except of the eclipses of Jupiter's Satellites, are made according to the apparent Time by the Meridian of the *Royal Observatory at Greenwich*: And the Sun's, Planets', and Moon's Places, with the Particulars depending on them in the II^d, IVth, Vth, VIth, and VIIth Pages of each Month, are computed to the Instant of apparent Noon, or that of the Sun's Centre passing the Meridian of *Greenwich*.

Apparent Time, at any Place, is that deduced immediately from the Sun, whether from the Observation of his passing the Meridian, from his Altitude observed at a Distance from the Meridian, or from his observed Rising or Setting. This Time is different from that shown by Clocks and Watches well regulated at Land, which is called equated or mean Time. This will be explained when we come to treat of the Equation of Time.

The Day is here supposed, according to the Method of Astronomers, to begin at Noon, or 12 Hours later than the civil Day of the same denomination, and to be counted up to 24 Hours, or the succeeding Noon, when the next Day begins. Thus the Day of the Month and the Hour of the Day are the same in this Method as in the civil Account at Noon, and from Noon till Midnight; but from Midnight till Noon they differ; for whereas in the civil Account a fresh Day is supposed to begin at Midnight, and the Hours to begin over again, in this Method the Day is still continued beyond Midnight, and the Reckoning of the Hours is continued up to 24. Thus the Distances put down to January 10, XV Hours, belong to January 11 at Three in the Morning by civil Reckoning.

There are XII Pages for every Month. The first Column of the first Page of each Month contains the Day of the Week expressed concisely by the initial Letter or Letters, *Sun.* standing for Sunday, *M.* for Monday, *Tu.* for Tuesday, *W.* for Wednesday, *Th.* for Thursday, *F.* for Friday, and *Sa.* for Saturday: the second the Day

of the Month: the third Column exhibits the Sundays and Festivals of the Church of England, and other remarkable Days: The last Column shows at Top the Moon's Phases, or the Times of New and Full Moon, and of the first and last Quarter or two Quadratures with the Sun: Beneath are contained miscellaneous Phenomena, namely, Eclipses of the Sun and Moon, and Occultations of Planets or fixed Stars not less than the fourth Magnitude, by the Moon, as they should happen at *Greenwich* by the Tables; the Conjunctions of the Moon with all Stars not less than the fourth Magnitude, which can be Occultations any where on the Globe, between the Latitudes of 60° North and 40° South: The Entrance of the Sun into the several Signs, and any other remarkable Phenomena.

The Stars are expressed by *Bayer's Characters of Reference*. The Conjunction of the Moon or a Planet with a Star is denoted by prefixing the Character of the Moon or Planet to that of the Star, the Time of the Conjunction being placed immediately before. The Case is the same with respect to the Occultation of a Star or Planet by the Moon, only this is further distinguished by the Addition of Im. or Immersion, to signify the Disappearance behind the Moon; and Em. or Emersion, to signify the Re-appearance of the same. Thus $8^{\text{d}}. 16^{\text{h}}. 22' \text{ } \textcircled{\text{M}} \text{ } \textcircled{\text{S}}$, signifies that the Moon will be in Conjunction with the Star $\textcircled{\text{S}}$ on the Eighth Day at $16^{\text{h}}. 22'$, exclusive of Parallax: And $10^{\text{d}}. 9^{\text{h}}. 14' \text{ Im. of } \textcircled{\text{II}}$; $10^{\text{d}}. 10^{\text{h}}. 23' \text{ Em. of } \textcircled{\text{II}}$ signifies that the Moon will eclipse $\textcircled{\text{II}}$ on the 10th Day, the Immersion being at $9^{\text{h}}. 14'$ and the Emersion at $10^{\text{h}}. 23'$, apparent Time at *Greenwich*.

The Occultations set down are only those visible at *Greenwich*; the Circumstances of which will commonly not differ very widely in most Parts of the kingdom; but in very distant Places they will differ very much, owing to the Change of the Moon's Parallax, or it may become no Occultation at all: The like may be said of Eclipses of the Sun.

An Eclipse of the Sun, or Occultation of a fixed Star by the Moon, if observed in a Place whose Latitude and Longitude are well determined, may be applied to the Correction of the Lunar Tables; but if made in a Place whose Latitude only is well known, may be applied to the Determination of the Longitude of the Place; but for this purpose an accurate Calculation must be made of the Moon's Parallaxes in Longitude and Latitude, which makes this Method of settling the Longitudes of Places, though a very accurate one, less convenient in Use for Persons not much versed in astronomical Calculations. However, this ought not to discourage Travellers or Mariners from endeavouring to make these Observations as often and as carefully as possible, when they shall happen to be at any Place whose Longitude they have Reason to think has not been well settled; since the necessary Calculations may be made at any Time afterwards by themselves, at Leisure, or referred to the Skill of Astronomers and Mathematicians.

Eclipses of the Moon are not liable to this Inconvenience; the Longitude of any Place, where the Eclipse has been observed, being deduced immediately by taking the Difference of the Time of the Observation and that set down in the *Ephemeris*, and converting it into Degrees, at the Rate of 15° to One Hour, &c. or more briefly by Table XIV. page 38 of the Tables requisite to be used with the *Ephemeris*. But as the Beginning or Ending of an Eclipse of the Moon cannot be generally observed nearer than One Minute, and sometimes Two or Three Minutes of Time, the Longitudes of Places cannot be certainly determined by this Method from a single Observation of the Beginning or End nearer than a Degree. Even this Point of Exactness will often be of great Service. If both the Beginning and End of the Eclipse be observed, a greater Degree of Exactness will be attained.

The Conjunctions of the Moon with the Planets, or fixed Stars not less than the fourth Magnitude, which may prove Occultations in some inhabited Parts of the Globe, are evidently designed to instruct Mariners or Travellers to look out frequently for such Observations; which if they happen to prove Occultations, and are carefully observed, will afford a certain Means of determining the Longitude of the Place of Observation.

The Two first Columns of the second Page of the Month contain the Day of the Week and Month, as before; next follow the Sun's Longitude, right Ascension in Time, Declination, and the Equation of Time with its Difference from Day to Day.

The Longitude of the Sun is made Use of in most of the succeeding Calculations of the *Ephemeris*, and may serve either to verify them, or to make other similar Calculations at a different Time of the Day: Particularly it may serve, with the Help of the Moon's Longitude and Latitude, to find the Distance of the Moon from the Sun at any Time, independent of the Distances contained in the VIIIth, IXth, Xth, and XIth Pages of the Month. To find the Sun's Longitude at any Time different from Noon, Proportion must be made according to its daily Increase: Saying, as 24^h . is to the Hour from Noon reckoned by the Meridian of *Greenwich*, so is the daily Variation of the Sun's Longitude, to a fourth Number; which added to the Sun's Longitude at the preceding Noon, gives the true Longitude at the given Time.

If the Time given be that of a Meridian different from *Greenwich*, it must be first reduced thereto, by adding or subtracting the Difference of Longitude turned into Time (at the Rate of One Hour to 15° . and One Minute of Time to 15 Minutes, or more briefly by Table XIV. Page 38, of the *Requisite Tables*) according as the Place is to the West or to the East of *Greenwich*. Example: Suppose any one should want to know the Sun's Longitude, January 19, 1767, at $4^h. 35^m$ being in $21^{\circ}. 15'$ Longitude East of *Greenwich*. The Difference of Longitude turned into Time is $1^h. 25'$, which subtracted from $4^h. 35'$, because the Place is East of *Greenwich*, leaves $3^h. 10'$ for the Time reduced to the Meridian of *Greenwich*. The Sun's Longitude the preced-

ing Noon is $9^{\circ}.29'.18''.2''$, and the following Noon it is $10^{\circ}.0'.19''.4''$ the Difference is $1^{\circ}.1'.2''$, or $61'.2''$, the daily Variation. Then say, as 24^h is to $3^h.10'$, so is $61'.2''$, to $8'.3''$, which added to $9^{\circ}.29'.18''.2''$, the Sun's Longitude on the preceding Noon, gives $9^{\circ}.29'.26''.5''$, the Sun's Longitude at the Time given. In like Manner any other of the following Articles is to be found by the Help of the *Ephemeris*.

The Sun's Longitude serves also to compute the Aberration of the fixed Stars and Planets.

The Sun's right Ascension in Time is useful to the practical Astronomer in regular Observatories, who adjusts his Clocks by sidereal Time. It is also useful to him for converting apparent into sidereal Time; as suppose that of an Eclipse of Jupiter's Satellites, in order to know at what Time it may be expected to happen by his Clock: For this Purpose the Sun's right Ascension at the preceding Noon, together with the increase of right Ascension from Noon, must be added to the apparent Time of the Phenomenon set down in the *Ephemeris*.

The Sun's right Ascension in Time serves also to compute the apparent Time of a known Star passing the Meridian: Thus, subtract the Sun's right Ascension in Time at Noon from the Star's right Ascension in Time, the Remainder is the apparent Time of the Star's passing the Meridian nearly; from which the proportional Part of the daily Increase of the Sun's right Ascension for this apparent Time from Noon being subtracted, leaves the correct Time of the Star's passing the Meridian.

Hence the apparent Time may be found from an observed Altitude of a known fixed star, suppose one contained in Page 7, of the *Requisite Tables*; as will be explained hereafter.

The Sun's right Ascension in Time is also useful for computing the Time of the Moon and Planets' passing the Meridian, as will be shown under their proper Articles.

The Sun's Declination is necessary to find the Latitude, whether at Sea or Land, from the Meridian Altitude observed: it is also requisite for finding the Latitude from Two Altitudes observed with the Interval of Time measured by a Watch; it serves for computing the Sun's Azimuth, having his Altitude and the Latitude of the Place given, in order to find the Variation of the Compass; it is required, jointly with the Latitude of the Place and the Sun's horary Angle, to compute his Altitude, if neglected to be observed at the Time of taking the Moon's Distance from the Sun for finding the Longitude, being useful to facilitate the Calculation of the Effect of Refraction and Parallax upon the Distance; it is also necessary to calculate the apparent Time from an observed Altitude of the Sun at a Distance from the Meridian, the Latitude being given; or to compute the Time of the Sun's Setting or Rising; which, though a less accurate Method than the former of obtaining the Time, may yet be useful when that cannot be had. For any of these Purposes the Sun's Declination must be found to the time given nearly, reduced to the Meridian of Green-

wich, making Proportion according to the Daily Increase or Decrease, in like Manner as was shown with respect to the Sun's Longitude.

The Equation of Time is a Correction, which added to, or subtracted from the apparent Time (according to its Title at the Top of the Column) gives equated or mean Time, or that which should be shown by a good Clock or Watch. Apparent Time is that which takes its Beginning from the Passage of the Sun's Centre over the Meridian of any Place; and had the Sun no Motion in the Ecliptic, or was his Motion reduced to the Equator or in right Ascension uniform, he would always return to the Meridian after equal Intervals of Time. But his apparent Motion in the Ecliptic continually varying, and his Motion in right Ascension being rendered further unequal on account of the Obliquity of the Ecliptic to the Equator, from these Causes it arises that the Intervals of his Return to the Meridian become unequal, and the Sun will gradually come too slow or too soon to the Meridian for an equable Motion, such as that of Clocks and Watches ought to be.

This Retardation or Acceleration of the Sun's coming to the Meridian is called the Equation of Time, and is contained in the last Column but one of Page II. and when applied according to its Title to the apparent Time, or that deduced immediately from the Sun, gives the mean or equated Time, whence the Error of a Clock or Watch may be found, and, if required, it may be corrected.

If it be proposed to convert mean Time into apparent, this is done by a contrary Process, by applying the Equation of Time to the mean Time given, with its Title or Sign changed; viz. subtracting instead of adding, and adding instead of subtracting.

The Equation of Time being set down in the *Ephemeris* for Noon at *Greenwich*, Proportion must be made according to the daily Difference, to find what it should be at any given Time reduced to the same Meridian, as in the preceding Articles. The last Column of this Page, containing the daily Differences of the Equation, is designed for this Purpose.

As often as it may be required to make any Calculations from astronomical Tables, and the Time given be apparent Time; it is necessary first to apply the Equation of Time thereto to convert it into mean Time, the Tables being disposed according to mean Motions. Thus the Articles contained in the *Ephemeris* answering to Noon were computed to 0^h. increased, or 24 Hours of the preceding Day diminished, by the Equation of Time: And the Moon's places set down for Midnight were computed to 12^h. increased or diminished by the Equation of Time.

What has been shown concerning the Equation of Time chiefly respects the Astronomer, the Mariner having nothing to do with it in computing his Longitude from the Moon's Distances from the Sun and Stars observed at Sea with the Help of the *Ephemeris*; all the Calculations thereof being adapted to apparent Time, the same which he will obtain by the Altitudes of the Sun or Stars in the Manner hereafter prescribed.

But when Time-keepers are used at Sea, the apparent Time deduced from an Altitude of the Sun must be corrected by the Equation of Time, and the mean Time found compared with that shown by the Watch; the Difference will be the Longitude in Time from the Meridian by which the Watch was set, as near as the Going of the Watch can be depended upon.

The Equation of Time is computed by taking the Difference of the Sun's true right Ascension and his mean Longitude corrected by the Equation of the Equinoxes in right Ascension, and turning it into Time at the Rate of 1' to 15' &c. The Equation of Time will be additive or subtractive as the Sun's true right Ascension is greater or less than his mean Longitude so corrected.

The Time of the Sun's Semidiameter passing the Meridian, page III. serves to reduce an Observation of a Transit of the preceding or subsequent Limb over the Meridian to that of the Centre, when only One was observed. It signifies a Portion of apparent Time, or even mean Time, the Difference being absolutely insensible upon so small an interval. It is found thus: Increase the Sun's Semidiameter in the ratio of the Co-sine of his Declination to the Radius, to find his Semidiameter in right Ascension, which turned into Time at the Rate of 1' to 15' and 1" to 15" gives the Time required. The Sun's Semidiameter in right Ascension is readily found by adding the Log. Co-sine of his Declination to the logistic Logarithm of his Semidiameter, the Sum is the logistic Logarithm of his Semidiameter in right Ascension, which divided by 15 gives the Time of his Semidiameter passing the Meridian. If the Clock by which the Observation is made be regulated according to the sidereal Time, this quantity must be increased in the Ratio of 365 to 366, if great precision is required. From the Time of the Sun's Semidiameter passing the Meridian may also be found the Time of its passing the horizontal or vertical Wire of a Quadrant or Sextant, which on some Occasions may have its Use.

The Semidiameter of the Sun is necessary to reduce the observed Altitude of his upper or lower Limb to that of the Centre; also to reduce the observed Distance of the Moon's nearest Limb from the Sun's nearest Limb to the Distance of the Centres. It is also useful to Astronomers to verify or ascertain the exactness of the Scale of their Micrometers, by Comparison with the Measure of the Sun's horizontal Diameter. This practice is particularly useful in solar Eclipses, when the Distance of the Cusps or the Versed Sine of the uneclipsed Part has been measured with the Micrometer.

The hourly Motion of the Sun is useful in computing solar and lunar Eclipses; also in correcting the assumed Longitude of the Ship, in order to find the Time from an Observation of the Distance of the Moon from the Sun, independent of the Distances contained in the *Nautical Ephemeris*; See *British Mariner's Guide*, page 49, and Table at the end of the same, page 25. The Logarithm of the Sun's Distance is useful in the Calculation of the Places of the Planets and Comets. The Place of the Moon's Node signifies its mean Longitude,

and is necessary for finding the Equation of the equinoctial Points both in Longitude and right Ascension, the Equation of the Obliquity of the Ecliptic, and the Deviations of the fixed Stars in right Ascension and Declination.

The Eclipses of Jupiter's Satellites are set down on the lower part of Page III. and to mean time. They are well known to afford the readiest, and for general Practice the best Method of settling the Longitudes of Places at Land; and it is by their Means principally that Geography has been so much reformed since the Invention of Telescopes, and the Construction of Tables for calculating the Time of their happening; and the Position of the most distant Places determined with equal Accuracy to the nearest. It was hoped that some Means might be found of using proper Telescopes on Shipboard to observe these Eclipses; and could this be effected, it would be of great service in ascertaining the Longitude of a Ship from time to time. In my Voyage to *Barbadoes*, under the Directions of the COMMISSIONERS OF LONGITUDE, in 1763, I made a full Trial of the late Mr. *Irwin's* Marine Chair proposed for this Purpose, but could not derive any advantage from the Use of it; and, considering the great Power requisite in a Telescope for making these Observations well, and the Violence as well as Irregularities of the Motion of a Ship, I am afraid the complete Management of a Telescope on Shipboard will always remain among the Desiderata. However, I would not be understood to mean to discourage any attempt founded upon good Principles to get over this Difficulty.

The Telescopes proper for observing the Eclipses of Jupiter's Satellites, are common refracting Telescopes from 15 to 20 Feet, reflecting Telescopes of 18 Inches or 2 Feet focal Length, and Telescopes of Mr. *Dollond's* Construction with two Object Glasses from 5 to 10 Feet; or, which are still more convenient, those of 46 Inches focal Length, and $3\frac{1}{2}$ Inches aperture, constructed with Three Object Glasses, which are as manageable as reflecting Telescopes, and perform as much as those which he makes of 10 Feet with Two Object Glasses.

The Eclipses of Jupiter's Satellites are observed by Astronomers at Land, as well in order to provide Materials for improving the Theories and Tables of their Motions, as for the sake of comparison with the corresponding Observations which may be made by Persons in different Parts of the Globe, whereby the Longitude of such Places will be accurately ascertained. It is indeed to be lamented that Persons, who visit distant Countries, are not more diligent to multiply Observations of this Kind; for want of which, the Observations made by Astronomers in established Observatories lose half their Use, and the Improvement of Geography is retarded. But it is to be hoped that an Emulation will spring up among those who may have Opportunities of rendering so useful a Service to the Public, to incite them to watch diligently for the Occasions of observing these Eclipses carefully, par-

ticularly of the First and Second, which are most exact for the purpose. The Eclipses, carefully calculated and set down in the *Ephemeris*, will serve to advertise them and Observers in general of the Times when they should attend to these Observations. The Person, who shall be under any Meridian different from *Greenwich*, must turn his difference of Longitude into Time: See *Requisite Tables*, page 38, and add it to or subtract it from the Time of the Eclipse set down in the *Ephemeris*, according as he is to the East or West of *Greenwich*, to find the mean Time at which the Eclipse will happen at his Meridian nearly. He must further take care to regulate his Watch or Clock by mean Time, or at least to know the Difference, as well in order to apprise him of the Time to look out for the Eclipse, as for ascertaining the apparent Time exactly at which he shall observe it. Equal Altitudes of the Sun or Stars taken with an Astronomical Quadrant afford the best Means of regulating Clocks and Watches for occasional Observations; or they may be taken with a *Hadley's* Quadrant, by reflection from a Bason of Water or Quicksilver, or from the horizon of the Sea, if the Observer has an open Prospect, and is not elevated above 5 or 600 Feet above the level of the Sea. But, if Opportunity does not admit of taking equal Altitudes, the Time may be determined from One Altitude taken in any of the Methods above-mentioned, at least Two or Three points of the Compass distant from the Meridian, but the nearer to the East or West the better, the Latitude of the Place being known, or being found by Observations of the Meridian Altitude of the Sun or Stars made on Purpose. It will be better to take several Altitudes in order to take a mean of the Results for greater Certainty. And if one Star be observed to the East and the other to the West of the Meridian, the Time will be determined with rather more certainty. The Manner of computing the apparent Time from the Altitude of the Sun or a Star is shown by Problems VIII. and IX. pages 25 and 26 of the Explanation and Use of the *Requisite Tables*.

The Observer, being in a Place whose Longitude is well known, should be settled at his Telescope Three Minutes before the expected Time of an Immersion or Emersion of the three first Satellites; and Ten Minutes before that of the fourth Satellite; but if the Longitude of the Place is very uncertain, he must begin to look out for the Eclipse proportionably sooner: Thus, if the Longitude of the Place is uncertain to 3 Degrees, answering to 12 Minutes of Time, he ought to fix himself to his Telescope 12 Minutes sooner than is mentioned above. Nevertheless, when he has observed one Eclipse of any Satellite, and thereby found the Error of the Tables, he may allow the same Correction to the Calculations of the *Ephemeris* for several Months, which will advertise him very nearly of the Time of expecting the Eclipses of the same Satellite, and dispense with his attending so long.

The Immersions signify the Instant of the Disappearance of the Satellite by entering into the Shadow of Jupiter; and the Emersions signify the first Instant of its Appearance at coming out of the same. They generally happen when the Satellite is at some distance from the Body of Jupiter, except near the Opposition of Jupiter to the Sun, when the Satellite approaches nearer to his Body. Before the Opposition of Jupiter to the Sun, the Immersions and Emersions happen on the West Side of Jupiter, and after the Opposition on the East Side; but if an Astronomical Telescope be used, which reverses Objects, the Appearance will be directly the contrary. Before the Opposition, the Immersions only of the first Satellite are visible; and after the Opposition, the Emersions only. The same is generally the Case with respect to the second Satellite; both the Phenomena of the same Eclipse are frequently observable in the two outer Satellites. The Immersions and Emersions, marked with an Asterisc in the *Ephemeris*, are those visible at *Greenwich*.

To know if an Eclipse will be visible in any place, find whether Jupiter be 8° above the Horizon of the Place, and the Sun as much below it. This may be done near enough by a celestial Globe: Otherwise, the Time of the Sun's Rising and Setting may be found for any Latitude, by a Table of semidiurnal Arcs contained in the popular Book called *The Mariner's Compass Rectified*, and many other Books; the Time of Jupiter's Rising and Setting may also be found from the Time of his passing the Meridian and Declination set down in the *Ephemeris*, with the Help of the same Table of semidiurnal Arcs; adding or subtracting the semidiurnal Arc answering to the same Declination of the Sun: Remembering always, that if Jupiter's Declination and the Latitude of the Place are of the same Denomination, the semidiurnal Arc will be more than six Hours, and if they are of contrary Denominations, will be less than six Hours. But it may be easier found whether the Eclipse will be visible at *Greenwich*, or whether it should be properly marked with an Asterisc, by the Tables, Page 28—31, annexed to the *Nautical Almanac* of 1772. For this purpose the mean time; at which the eclipse is expected to happen, found according to l. 7, p. 152, must be turned into apparent time, by applying the equation of time to it with a contrary sign.

The Immersion or Emersion of any Satellite being carefully observed in any Place according to mean Time, the Longitude from *Greenwich* is found immediately by taking the Difference of the Observation from the corresponding Time shewn in the *Ephemeris*, which must be turned into Degrees, &c. by *Requisite Tables*, Page 38: and will be East or West of *Greenwich*, as the Time observed is more or less than that of the *Ephemeris*.

Example: Suppose an Emersion of the first Satellite should be observed at the *Cape of Good Hope*, April 16, 1805, at $13^{\text{h}}. 25'. 35''$, mean Time: The Time by the *Ephemeris* being $12^{\text{h}}. 12'. 2''$, the Difference is $1^{\text{h}}. 13'. 33''$, whence the Longitude of the *Cape* should

be $18^{\circ} 23' 15''$ East of *Greenwich*, because the Time supposed to be observed at the Cape is more than that of the *Ephemeris*.

It is to be observed that a correspondent Observation of an Eclipse of a Satellite of Jupiter, made under a well-known Meridian, is to be preferred to the Calculations of the *Ephemeris* for comparing with an Observation made in a Meridian whose Longitude is required; but if no Corresponding Observation can be obtained, as is frequently the Case, it will be best to find what correction the Calculations of the *Ephemeris* require by the nearest Observations to the given Time that can be obtained; which correction, applied to the Calculation of the given Eclipse in the *Ephemeris*, renders it almost equivalent to an actual Observation.

The Longitudes and Latitudes of the Planets, Page IV. serve to show where to look for them in the Heavens, to enable persons less skilled to distinguish them from the fixed Stars. They also show when they are in the most important Points of their Orbits, where it is most material to observe them. Their Declinations and the apparent Times of their passing the Meridian are particularly useful to Astronomers, who are furnished with Quadrants and Transit Instruments well fixed in the Meridian, in setting their Instruments for observing their right Ascensions and Declinations, and also to those who are only furnished with a Telescope fitted with a Micrometer.

The apparent Time of a Planet's passing the Meridian may be computed thus; the Planet's Right Ascension being calculated from its Longitude and Latitude, and turned into Time, subtract the Sun's Right Ascension at Noon in Time from it, to find the Time of the Planet's passing the Meridian nearly, which call T ; take the Difference of the \odot and Planet's daily Variations in right Ascension in Time, if the Planet is progressive in right Ascension, or the Sum, if it is retrograde, which call X ; then say by the Rule of proportion;

As $24^h \mp X : T :: X : e$; and $T \pm e$ will be the correct Time of the Planet's passing the Meridian. The upper Signs are to be used both to X and e if the Planet's progressive Motion in right Ascension be greater than that of the Sun; in any other Case the lower Signs are to be made use of.

But perhaps it may be found more readily by continual Approximation, as follows: Take the proportional Part of the Difference or Sum of the \odot and Planet's daily Motion in right Ascension, answering to the Time of the Planet's passing the Meridian, found nearly, in Proportion to 24^h , and take a further like proportional Part of this proportional Part: and again of this last, and so on as far as is necessary. The Sum of all these proportional Parts added to the Time of the Planet's passing the Meridian, found nearly, if the Planet's progressive Motion in right Ascension is greater than that of the Sun, otherwise subtracted, gives the apparent Time of the Planet's passing the Meridian.

Example: Let it be required to find the Time of the Moon's passing the Meridian, July 1, 1767

The Sun's right Ascension in Time, July 1st, is $6^h. 40'. 25''$, and July 2d, is $6^h. 44'. 33''$ by the *Ephemeris*. Therefore his daily Motion in right Ascension is $4'. 8''$. The Moon's right Ascension, July 1st at Noon, by the *Ephemeris*, is $159^\circ. 2'$, answering to $10^h. 36'. 8''$ of Time, and July 2d is $169^\circ. 39'$, answering to $11^h. 18'. 36''$. The Difference is $42'. 28''$ of Time, from which $4'. 8''$ being subtracted, leaves $38'. 20''$. Subtract $6^h. 40'. 25''$ the Sun's right Ascension July 1st at Noon, from $10^h. 36'. 8''$ the Moon's right Ascension the same Noon, the remainder $3^h. 55'. 43''$ is the approximate Time of the Moon's passing the Meridian. The proportional Part of $38'. 20''$, answering to this, is $6'. 17''$, and the proportional Part of $6'. 17''$ is $9''$; therefore $6'. 17''$ and $9''$, or $6'. 26''$ added to $3^h. 55'. 43''$ give $4^h. 2'. 9''$, the apparent Time of the Moon's passing the Meridian. In the *Ephemeris* it is $4^h. 2'$. It may also be computed by taking the Difference of the Moon's right Ascension at Noon and Midnight, but then half the Sun's daily variation in right Ascension must be made use of, and Proportion must be made for 12 instead of 24 Hours: and if the Moon passed the Meridian after Midnight, the Sun's right Ascension at Midnight must be used, which is a Mean between his right Ascensions on the preceding and subsequent Noon. For the Planets it will be sufficient to take the first proportional Part only.

The Days of the Oppositions, Quadratures, &c. of the Planets to the Sun, are Times at which they ought to be observed in fixed Observatories, for settling the Elements of their Orbits by a Series of several Years Observations.

The Vth, VIth, VIIth, VIIIth, IXth, Xth, XIth Pages of each Month contain the Moon's Place, and all the Circumstances relating to her Motion and her Distances from the Sun and proper Stars, from which her Distance should be observed for finding the Longitude at Sea. The Longitude, Latitude, and Declination of the Moon, and Time of her passing the Meridian, afford the like Uses with the same Circumstances of the Planetary Motions, and many more besides. For the sake of greater Precision, the Moon's Longitude, Latitude, right Ascension, Declination, Semidiameter, Horizontal Parallax, with its proportional Logarithm, are computed Twice a Day to Noon and Midnight, and may readily be inferred to any intermediate Time with the greatest Exactness.

Example:—Let it be required to find the Moon's Longitude and Latitude, &c. July 16, 1767, at $16^h. 22'. 16''$.

First to find the Longitude.

The Moon's Longitude, July 16, at 12^h is $0^\circ. 6'. 40'. 25''$, and July 17, at Noon, $0^\circ. 13'. 47'. 48''$, the Difference $7^\circ. 7'. 23''$ is the Moon's Motion in 12 Hours; say then by the Rule of Proportion:

As 12^h is to $4^h. 22'. 16''$ (the excess of $16^h. 22'. 16''$ above 12^h) so is $7^\circ. 7'. 23''$ to $2^\circ. 35'. 41''$; but this must be corrected on account of the Moon's unequal Motion in 12 Hours, by the Table of Equation of second Difference annexed to Mr. Taylor's *Sexagesimal Table*, page 244—247: For this Purpose take out of the *Ephemeris* the two

Longitudes of the Moon next preceding the given Time, and the Longitudes immediately following it, and set them down in Order one after another, as follows :—

	D's Long. by the <i>Ephemeris</i> .	1st Diff.	2d Diff.	Mean of 2d Diff.
1767,	s o ' "	o ' "	' "	' "
July 16, Noon . . .	11. 29. 29. 34			
Midnight	0. 6. 40. 25	7. 10. 51	3. 28	3. 36
17, Noon . . .	0. 13. 47. 48	7. 7. 23	3. 44	
Midnight	0. 20. 51. 27	7. 3. 39		

Take their Differences $7^{\circ} 10'. 51''$, $7^{\circ} 7'. 23''$, $7^{\circ} 3'. 39''$; take the Differences of these Differences, or the second Differences $3'. 28''$, $3'. 44''$; and take their Mean which is $3'. 36''$. Now look for the Equation of second Difference, answering to $4^h. 22'$ after Midnight, found on the Side, and $3'. 36''$ at the Top, which will be found $= 24''$, and which, according to the Remark at the Bottom of the Table, must be added to $2^{\circ} 35'. 41''$, the first proportional Part, because the Motion in 12 Hours or first Differences are decreasing, the Sum $2^{\circ} 36'. 5''$ added to $0^{\circ} 6'. 40'. 25''$, the Moon's Longitude at Midnight, gives $0^{\circ} 9'. 16'. 30''$, the Moon's true Longitude, and is as correct as the Longitudes from which it is deduced.

N. B. If the first Differences of the Four Longitudes of the Moon taken out first increase and then decrease, or, *vice versd*, first decrease and then increase, take Half the Difference of the two second Differences for the Mean second Difference, with which take out the Equation of second Difference, and add or subtract it as the First first Difference is greater or less than the Third first Difference.

To find the Moon's Latitude.

Take out of the *Ephemeris* the two Latitudes preceding and Two following the given Time, and set them down in Order, and take their first and second Differences, and the Mean of the Two second Differences; find the proportional Part of the Middle first Difference answering to the Hours and Minutes, &c. of the given Time after Noon or Midnight; which correct in the following Manner: Entering Table of Equation of second Difference, page 244—247, with the Hour from Noon or Midnight on the Side, and the Mean second Difference at Top, take out the corresponding Number of seconds, which added to or subtracted from the proportional Part found above, according as the Motion in 12 Hours or first Difference is decreasing or increasing; or, more generally, according as First first Difference is greater or less than Third first Difference, gives the proportional Part corrected; which now added to, or subtracted from the Moon's Latitude at the preceding

Noon or Midnight, as the Latitude in these 12 Hours is increasing or decreasing, gives the Moon's Latitude correct.

Example:—The Moon's Latitude is required, July 16, 1767, at 16^h. 22'. 16".

	D's Lat. by the <i>Ephemeris</i> .	1st Diff.	2d Diff.	Mean of 2d Diff.
1767,	o ' "	' "	' "	' "
July 16, Noon . .	4. 31. 10 N.	18. 26		
Midnight	4. 49. 36	13. 50	4. 36	
17, Noon . .	5. 3. 26	9. 6	4. 44	4. 40
Midnight	-5. 12. 32			

The Moon's Latitude July 16 at Midnight being 4°. 49'. 36" N. and the Motion in the next 12 Hours being 13'. 50" say by Proportion,

As 12^h is to 4^h. 22'. 16", so is 13'. 50" to 5'. 2": but this must be corrected by adding 32", the Equation of second Difference, answering to the Hour 4^h. 22', and the Mean second Difference, 4'. 40", because the first Differences are decreasing, or rather because the first of them 18'. 26", is greater than the last of them 9'. 6", therefore the proportional Part corrected is 5'. 2" + 32" = 5'. 34", which added to 4°. 49'. 36", gives 4°. 55'. 10" N. the Moon's Latitude correct.

Remarks on some Circumstances necessary to be attended to, in order to obtain and apply the Correction of second Differences rightly in computing the Moon's Latitude,

I. If the Moon's Latitude taken out of the *Ephemeris* for Noon and Midnight changes its Denomination from North to South or from South to North, the Sum of the Two Latitudes of contrary Denominations, where the Change happens, is to be accounted the first Difference in that Place.

II. If the Three first Differences first increase and then decrease, or *vice versd*, first decrease and then increase, Half the Difference of the Two second Differences is to be taken for the Mean second Difference.

III. If the Series of Four Latitudes taken out should first increase and then decrease about the Moon's greatest Latitudes, take the Sum of the Two first Differences standing on each Side of the greatest Latitude for the second Difference in that Place; correct the Moon's Latitude at Noon or Midnight by the simple proportional Part first found; and to the Latitude so corrected, add always in this Case the Equation of second Difference from page 244—247, answering to the Mean second Difference.

Before I quit this Subject of Interpolation by second Differences, I shall point out another Method, by which the same End may be obtained more readily, and with fewer Rules, by those who are well acquainted with algebraic Subtraction and Addition, and the Manner of applying the Signs in those Operations. Subtract each Latitude from the following for the first Differences, to which prefix the Sign —

if the Latitudes decrease, and subtract each first Difference, thus found, from the following one of the same Order for the second Differences. Half the Sum of the Two second Differences, standing on each Side of the Interval to be interpolated, is to be accounted the Mean second Difference; the Equation corresponding to it by Table, Page 244—247, is to be applied always with the contrary Sign.

These Operations are to be performed, and the Signs to be applied as in algebraic Subtraction and Addition. Note further, if the four given Latitudes change their Denomination, call the second Latitude +, and those of a contrary Denomination —.

The Moon's Declination may be found at any Hour in the same Manner as her Latitude; but as the Correction arising from second Differences will never exceed $2\frac{1}{2}$, this may be neglected on most Occasions; but if any one is desirous to obtain the Declination true to a Minute, the Correction is easily applied, as shown above.

The other Articles of Page VI. and VII. viz. the Moon's Right Ascension, her Semidiameter, horizontal Parallax, with its proportional Logarithm, and the Distances contained in the four last Pages of the Month, may be all found correctly by even Proportion, without requiring any Allowance on Account of second Differences. The proportional Part of the Moon's Longitude, &c. for any Hour may be found very readily by the Help of the Table of proportional Logarithms, Page 39—55 of the *Requisite Tables*.

The Moon's Longitude and Latitude are used in computing the Distances from the Sun and Stars contained in the four last Pages of the Month, as well as the Appulses to Stars pointed out in Page I. and, jointly with her Parallax and Semidiameter, are necessary for computing the Eclipses of the Sun and Moon, and the Occultations of fixed Stars and Planets by the Moon. They also facilitate the Calculation of the Longitude of any Place from an observed Eclipse of the Sun, or Occultation of a Star or Planet by the Moon: Or, if the Meridian be well known, the Parallax and Semidiameter serve to deduce the Moon's true Place in the Heavens from the Observation, which compared with that given by the *Ephemeris* shows the Error of the Tables at the Time. The Moon's Semidiameter and Parallax are applied in correcting almost all Observations of the Moon. The proportional Logarithms of the Moon's Parallax serve further to facilitate the Calculations of Parallaxes.

The Moon's right Ascension and Declination are useful to compute her Altitude at any Time, particularly at the Observation of her distance from the Sun or a Star, supposing it was neglected to be or could not be observed properly; which latter Case may sometimes happen in the Night, though I think but rarely; the utmost Accuracy therein not being required for the Calculations of Refraction and Parallax. See *British Mariner's Guide*, Page 57, and *Requisite Tables*, Page 24. The Moon's Declination, with her Semidiameter and Parallax, serve for finding the Latitude by the Meridian Altitude of her upper and lower Limb observed at Sea. See *British Mariner's Guide*, Page 93,

and *Requisite Tables*, Page 15. The Moon's right Ascension and Declination serve also to compute the Time from her Altitude observed at the Observation of her Distance from a Star; whence the Longitude may be inferred, tho' no Altitude of the Sun or a Star was taken for regulating the Time. See *British Mariner's Guide*, Page 61, and Mr. *Edwards's* 5th Problem annexed to the *Nautical Almanac* of 1781, Page 10.

The Distances of the Moon from Sun and fixed Stars, contained in the VIIIth, IXth, Xth, and XIth Pages of the Month, are set down to every Three Hours of apparent Time by the Meridian of *Greenwich*, and are designed to relieve the Mariner from the Necessity of a Calculation, which he might think prolix and troublesome, and to enable him, when compared with the Distance observed carefully at Sea, to infer his Longitude readily and with little Danger of Mistake to a Degree of Exactness that may be thought sufficient for most nautical Purposes. But useful and valuable as the Practice of this Method may be at present, it is not a Remark unworthy our Notice, that every future Improvement of the Lunar Tables, as well as the Instruments, will bring it nearer and nearer to Perfection.

The Moon's Distances are computed both from the Sun and proper Stars, and generally from One Object on each Side of her, to afford the Mariner a greater Number of Opportunities of Observation, and a Means of attaining a greater Degree of Exactness. The Distances from the Sun are computed between 40° and 120° of Distance. While the Moon is between the Distances of 20° and 40° from the Sun, her Distance is computed only from a Star on the contrary Side that the Sun is. When she is between the Distances of 40° and 90° from the Sun, her Distance is computed both from the Sun and from a Star on the contrary Side to the Sun; when the Moon is above 90° from the Sun her Distance is computed from Two Stars, one on each Side of her; though still her Distance is computed also from the Sun from 90° to 120° . Though the Distance of the Moon from the Sun or Star, well observed with a good Instrument, is sufficient to determine the Longitude, with the help of the *Ephemeris*, always within a degree, and generally much nearer, yet it will conduce to still greater Accuracy, if the Observer takes the Distance of the Moon from Two Stars, or the Sun and a Star, or, when the Moon is between 90° and 120° distant from the Sun, from the Sun and Two Stars, if he can be so lucky as to obtain these several Observations.

The Longitude being computed from the Observations made with each Star respectively, the Mean of the Results is to be taken as probably approaching nearest to the true Longitude. In particular the Moon's Distance should be taken from Two Stars, or the Sun and a Star on each Side of her, as often as Opportunity permits; since the Mean of the Results will probably be at least as exact again as either separately, I mean as far as depends on any Imperfection of the Instruments, and unavoidable small Errors arising in the Use of them, Errors of these kinds having a natural Tendency to correct each other;

for that small Error which arises from the imperfection of the Lunar Tables will affect the Result from either Star equally. But the Error of *Mayer's* last Lunar Tables, as corrected from a Series of Dr. *Bradley's* Observations of 9 Years, by Mr. *Charles Mason* in 1778, and by Mr. *Delaplace's* further corrections, being those used for the *Nautical Almanacs* of 1805, and following years, probably never exceeding 30", the Uncertainty hence arising, in the Determination of the Longitude, can scarcely ever exceed 17 Miles of Longitude, and generally will be much less.

The Distances, set down in the *Ephemeris*, afford the Observer a ready Means of knowing the Star from which the Moon's Distance is to be observed; for he has nothing to do but to set his Quadrant to the Distance computed roughly from the *Ephemeris*, neglecting the Seconds, at the apparent Time estimated nearly by the Meridian of *Greenwich*; and direct his Sight to the East or West of the Moon, according as the Distance at *Greenwich* is found in the VIIIth and IXth, or Xth and XIth Pages of the Month; and having found the Moon upon the little Speculum, let him give a Sweep with the Quadrant to the Right and Left, and he will find the Star he seeks for, if above the Horizon and the Air be clear, nearly in a Line perpendicular to the Line of the Moon's Horns or longer Axis, or, which is the same Thing, in the Line of the Moon's shorter Axis produced. The Star is always one of the brightest, so that there is little Danger of mistaking another for it, if the preceding Directions are carefully observed. The Time at *Greenwich* is estimated nearly by turning the supposed Longitude from *Greenwich* into Time, by *Requisite Tables*, Page 38, and adding it to or subtracting it from the apparent Time at the ship, as its Longitude is West or East of *Greenwich*. It will be sufficient if the distance be computed from the *Ephemeris* within 10', or 20', for setting the Quadrant. The principal Use of the Distances of the Moon from the Sun and fixed Stars, namely, in determining the Longitude by comparison with the corresponding Distances observed at Sea, is shown in Problem XI. Page 37 of *Requisite Tables*.

The Distances contained in the *Ephemeris* were computed strictly to Noon and Midnight, and thence interpolated for every Three Hours, according to the Method shown for computing the Moon's Latitude, Page 157—158; except that the Correction of second Differences, at the middle of the Interval to be interpolated, was taken $\frac{1}{8}$ of the Mean of the Two second Differences, and at the First and Third Quarter of the Interval was taken $\frac{3}{8}$ of the Correction just found at the Middle of the Interval; instead of consulting Mr. *Taylor's* Table, Page 248 and 249, which would however have given the same Result. But, at the first 12 Hours, when the Distances of the Moon from a Star begin, and the last 12 Hours, when the Distances end, there being only One second Difference instead of Two second Differences on each Side to take a Mean of, this Method fails in these Cases, and therefore the following is to be substituted in its stead, being derived from Sir *Isaac Newton's* Solution of the Problem of drawing a Curve through the Extremities of any Number of given Ordinates.

From Four Distances at Noon and Midnight computed strictly, to interpolate Three Distances at the IIIrd, VIth, and IXth Hour of the first or last Interval.

Subtract each Distance from the following, for the first Difference, and prefix the Sign -, if the Distances decrease. Subtract each first Difference thus found from the following One of the same Order, for the second Difference: And in like manner subtract the First second Difference from the following for the third Difference; applying the Signs as in algebraic Subtraction. Denote the first or last first Difference by b ; the first or last second Difference by c , according as the Interpolation to be made is for the first or last 12 Hours; denote also the third Difference by d , and, a being put to signify the Distance at the Beginning of the Interval, the interpolated Distances will be as follows:—

$$\text{At IIIrd Hour of first Interval } a + \frac{1}{4}b - \frac{3}{32}c + \frac{1}{128}d,$$

$$\text{At VIth Hour of first Interval } a + \frac{1}{2}b - \frac{1}{8}c + \frac{1}{16}d,$$

$$\text{At IXth Hour of first Interval } a + \frac{3}{4}b - \frac{3}{32}c + \frac{1}{128}d;$$

Or,

$$\text{At IIIrd Hour of last Interval } a + \frac{1}{4}b - \frac{3}{32}c - \frac{1}{128}d,$$

$$\text{At VIth Hour of last Interval } a + \frac{1}{2}b - \frac{1}{8}c - \frac{1}{16}d,$$

$$\text{At IXth Hour of last Interval } a + \frac{3}{4}b - \frac{3}{32}c - \frac{1}{128}d.$$

In adapting these Formulæ to Numbers, great Care must be taken about the right Application of the Signs. Thus if b , c , or d is Negative, apply the Number expressing the Value of that Term of the Formula where it is found with a contrary Sign to that of the Formula.

Let me add in this Place, that if in filling up the first and last Intervals, a new second Difference has been supposed in arithmetical Progression with the Two given ones, in order to take a mean between it and the first or last second Difference, the Interpolation at the Middle of the Interval or VIth Hour will be had true, the same as if the above Formulæ had been used. But at the Interpolation of the first and third Quarter there will be an Error of $\frac{1}{128}$ third Difference; which will be corrected, by applying $+\frac{1}{128}d$ or third Difference, to Number found at the first Quarter of the Interval, and $-\frac{1}{128}d$ to that found at the third Quarter of the Interval; equally the same whether it be the first or last Interval.

The Configurations of Jupiter's Satellites, Page XIIth and last, exhibit the apparent Positions of the Satellites with respect to each other, and to Jupiter at such an Hour of the Evening or Night as they are most likely to be observed, and serve to distinguish the Satellites from one another. Jupiter is distinguished by the Mark \bigcirc , and the Satellites by Points with Figures annexed, the Figure 1 signifying the

the first Satellite, 2 the second Satellite, &c. When the Satellite is approaching towards Jupiter, the Figure is put between Jupiter and the Point ; and when the Satellite is receding from Jupiter, the Figure is put on the other Side of the Point. The Satellites are in the superior Parts of their Orbits, or furthest from the Earth, when they are marked to the right hand or West of Jupiter approaching him ; or to the left hand or East of Jupiter receding from him ; but are in the inferior Parts of their Orbits, or nearest to the Earth, when they are marked to the right hand or West of Jupiter receding from him, or to the left or East of Jupiter approaching him. The Cipher \circ , sometimes annexed to the Figure of the Satellite towards the Margin, signifies that it is invisible on the Face of Jupiter ; and the black Mark \bullet signifies that it is invisible, being eclipsed in Jupiter's Shadow, or behind Jupiter eclipsed by his body.

A Catalogue of Longitudes of Nine Principal fixed Stars to the beginning of 1815, and of their Latitudes to the middle of the Year : from the latest Observations.

	Longitude beg. of 1815.	Latitude middle of 1815.	Ann. incr. of Long.	App. var. of Latitude.
α Arietis.	1. 5. 4. 32, 9	9. 57. 37, 4 N.	50,275	+0, 161
Aldebaran.	2. 7. 12. 11, 9	5. 28. 45, 8 S.	50,208	-0, 335
Pollux.	3. 20. 39. 43, 1	6. 40. 15, 9 N.	49,500	+0, 255
Regulus.	4. 27. 15. 24, 3	0. 27. 37, 9 N.	49,944	+0, 220
Spica Virg.	6. 21. 15. 33, 5	2. 2. 19, 7 S.	50,083	+0, 171
Antares.	8. 7. 10. 43, 6	4. 32. 38, 6 S.	50,118	+0, 424
α Aquilæ.	9. 29. 9. 56, 4	29. 18. 44, 2 N.	50,793	+0, 080
Fomalhaut.	11. 1. 15. 18, 6	21. 6. 38, 6 S.	50,593	+0, 212
α Pegasi.	11. 20. 54. 33, 1	19. 24. 44, 0 N.	50,110	+0, 098

A Catalogue of 45 Principal Fixed Stars.

JANUARY 1, 1818.

No.	Names of Stars.	R.A. H. M. S.	Annual Variation.	N. P. D.	Annual Variation.
1	γ Pegasi.	0. 3. 52, 35	+ 3, 08	$75^{\circ} 49' 40''$ 00	- 20, 20
2	α Cassiop.	0. 30. 14, 00	3, 31	34. 27. 43, 68	- 19, 80
3	Polaris.	0. 56. 32, 68	14, 26	1. 39. 44, 50	- 19, 45
4	α Arietis.	1. 56. 55, 96	3, 35	67. 24. 9, 51	- 17, 40
5	α Ceti.	2. 52. 46, 21	3, 12	86. 37. 47, 00	- 14, 75
6	α Persei.	3. 11. 22, 54	4, 20	40. 47. 44, 87	- 13, 50
7	Aldebaran.	4. 25. 29, 13	3, 43	73. 51. 55, 51	- 7, 95
8	Capella.	5. 3. 15, 41	4, 41	44. 11. 57, 61	- 4, 57
9	Rigel.	5. 5. 47, 51	2, 88	98. 25. 9, 18	- 4, 92
10	β Tauri.	5. 14. 47, 53	3, 78	61. 33. 24, 52	- 3, 83
11	α Orionis.	5. 45. 19, 14	3, 25	82. 38. 8, 80	- 1, 37
12	Sirius.	6. 37. 7, 32	2, 64	106. 28. 22, 20	+ 4, 36
13	Castor.	7. 22. 58, 09	3, 85	57. 43. 22, 04	+ 7, 06
14	Procyon.	7. 29. 46, 07	3, 15	84. 18. 56, 96	+ 8, 54
15	Pollux.	7. 34. 9, 80	3, 69	61. 32. 36, 41	+ 8, 00
16	α Hydræ.	9. 18. 38, 41	2, 95	97. 52. 26, 77	+ 15, 19
17	Regulus.	9. 58. 40, 02	3, 21	77. 8. 49, 27	+ 17, 33
18	α Urs. Maj.	10. 52. 24, 02	3, 83	27. 16. 8, 00	+ 19, 30
19	β Leonis.	11. 39. 45, 93	3, 07	74. 24. 37, 85	+ 20, 04
20	γ Urs. Maj.	11. 44. 12, 42	3, 20	35. 17. 35, 25	+ 20, 00
21	Spica Virginis.	13. 15. 36, 97	3, 14	100. 12. 25, 75	+ 18, 95
22	η Urs. Maj.	13. 40. 21, 36	2, 38	39. 46. 28, 81	+ 18, 20
23	Arcturus.	14. 7. 21, 66	2, 73	69. 51. 53, 95	+ 18, 99
24	γ } α Libræ.	14. 40. 38, 16	3, 29	105. 13. 54, 74	+ 15, 20
25	β } α Libræ.	14. 40. 49, 61	+ 3, 29	105. 16. 38, 64	+ 15, 20
26	β Urs. Minor.	14. 51. 20, 69	- 0, 32	15. 6. 2, 43	+ 14, 70
27	α Cor. Bor.	15. 26. 58, 95	+ 2, 53	62. 39. 57, 90	+ 12, 49
28	α Serpentis.	15. 35. 18, 46	2, 94	82. 59. 37, 88	+ 11, 73
29	Antares.	16. 18. 15, 63	3, 66	116. 0. 58, 92	+ 8, 62
30	α Herculis.	17. 6. 21, 05	2, 73	75. 23. 36, 32	+ 4, 48
31	α Ophiuchi.	17. 26. 29, 28	2, 77	77. 17. 54, 38	+ 3, 10
32	γ Draconis.	17. 52. 22, 82	1, 38	38. 29. 7, 05	+ 0, 70
33	α Lyræ.	18. 30. 46, 51	2, 03	51. 22. 45, 48	- 3, 00
34	γ } α Aquilæ.	19. 37. 36, 28	2, 85	79. 49. 18, 70	- 8, 38
35	α } α Aquilæ.	19. 41. 53, 98	2, 93	81. 36. 13, 50	- 9, 06
36	β } α Aquilæ.	19. 46. 22, 18	2, 95	84. 2. 21, 25	- 8, 37
37	γ } α Capricorni.	20. 7. 32, 90	3, 33	103. 4. 41, 40	- 10, 80
38	β } α Capricorni.	20. 7. 56, 82	3, 33	103. 5. 58, 30	- 10, 80
39	α Cygni.	20. 35. 13, 64	2, 04	45. 21. 53, 83	- 12, 63
40	α } α Cephei.	21. 14. 13, 56	1, 42	28. 10. 58, 05	- 14, 90
41	β } α Cephei.	21. 26. 16, 03	0, 81	20. 14. 12, 04	- 15, 70
42	α Aquarii.	21. 55. 25, 76	3, 09	91. 11. 54, 77	- 17, 37
43	Fomalhaut.	22. 47. 33, 97	3, 34	120. 35. 4, 00	- 19, 10
44	α Pegasi.	22. 55. 41, 99	2, 98	75. 46. 14, 48	- 19, 43
45	α Andromedæ.	23. 58. 59, 82	3, 08	61. 54. 50, 21	- 19, 99

The right Ascensions in the above Catalogue were deduced from the Observations made with the new Transit Instrument erected at the Royal Observatory in the summer of the year 1816. They are still perhaps subject to a very small error, common to every star, and which cannot be determined exactly till several equinoxes have been observed.

*Comparison of Dr. Maskelyne's Catalogue, with that
deduced from the New Transit Instrument.*

No.	Names of Stars.	1818. Right Ascension by the New Instrument	Dr. Maskelyne's Catalogue.	Difference in Sid ^l Time.
1	γ Pegasi.	h. 3. 52, 35	h. 3. 52, 36	+ 0, 01
2	α Arietis.	1. 56. 55, 96	1. 56. 55, 92	- 0, 04
3	α Ceti.	2. 52. 46, 20	2. 52. 46, 28	+ 0, 08
4	Aldebaran.	4. 25. 29, 13	4. 25. 29, 16	+ 0, 03
5	Capella.	5. 3. 15, 41	5. 3. 15, 50	+ 0, 09
6	Rigel.	5. 5. 47, 51	5. 5. 47, 56	+ 0, 05
7	β Tauri.	5. 14. 47, 53	5. 14. 47, 51	- 0, 02
8	α Orionis.	5. 45. 19, 14	5. 45. 19, 17	+ 0, 03
9	Sirius.	6. 37. 7, 32	6. 37. 7, 43	+ 0, 11
10	Castor.	7. 22. 58, 09	7. 22. 58, 08	- 0, 01
11	Procyon.	7. 29. 46, 07	7. 29. 46, 02	- 0, 05
12	Pollux.	7. 34. 9, 80	7. 34. 9, 75	- 0, 05
13	α Hydræ.	9. 18. 38, 41	9. 18. 38, 41	0, 00
14	Regulus.	9. 58. 40, 02	9. 58. 39, 99	- 0, 03
15	β Leonis.	11. 39. 45, 93	11. 39. 46, 03	+ 0, 10
16	Spica Virginis.	13. 15. 36, 97	13. 15. 36, 94	- 0, 03
17	Arcturus.	14. 7. 21, 66	14. 7. 21, 66	0, 00
18	1 } α Libræ.	14. 40. 38, 16	14. 40. 38, 16	0, 00
19	2 } α Libræ.	14. 40. 49, 61	14. 40. 49, 47	- 0, 14
20	α Cor. Bor.	15. 26. 58, 95	15. 26. 58, 92	- 0, 03
21	α Serpentis.	15. 35. 18, 46	15. 35. 18, 41	- 0, 05
22	Antares.	16. 18. 15, 63	16. 18. 15, 69	+ 0, 06
23	α Herculis.	17. 6. 21, 05	17. 6. 21, 06	+ 0, 01
24	α Ophiuchi.	17. 26. 29, 28	17. 26. 29, 15	- 0, 13
25	α Lyræ.	18. 30. 46, 51	18. 30. 46, 55	+ 0, 04
26	γ } α Aquilæ.	19. 37. 36, 28	19. 37. 36, 24	- 0, 04
27	α } α Aquilæ.	19. 41. 53, 98	19. 41. 53, 98	0, 00
28	β } α Aquilæ.	19. 46. 22, 18	19. 46. 22, 23	+ 0, 05
29	1 } α Capricorni.	20. 7. 32, 90	20. 7. 32, 92	+ 0, 02
30	2 } α Capricorni.	20. 7. 56, 82	20. 7. 56, 75	- 0, 07
31	α Cygni.	20. 35. 13, 64	20. 35. 13, 57	- 0, 07
32	α Aquarii.	21. 56. 25, 76	21. 56. 25, 83	+ 0, 07
33	Fomalhaut.	22. 47. 33, 97	22. 47. 34, 11	+ 0, 14
34	α Pegasi.	22. 55. 41, 99	22. 55. 41, 92	- 0, 07
35	α Andromedæ.	23. 58. 59, 82	23. 58. 59, 86	+ 0, 04

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The stars chosen should differ at least 50° from each other in declination; and the nearer the difference is to 90° the better.

Let N be the declination of the star north of the Equator.

S the declination of the star south of the Equator

A' the apparent right ascension of the star which passes first through the telescope.

T' the observed time of its passage

A'' the apparent right ascension of the star which next passes through the telescope.

T'' the observed time of its passage

L the latitude of the place.

$(R'' - R') = \partial R = \text{diff. of right ascen.}$

$(T'' - T') = \partial T = \text{diff. of observed times.}$

A the deviation of the transit in azimuth from the meridian.

Then,

$$A = (\partial T - \partial R) \times \frac{\cos. N \cos. S.}{\cos. L. \sin(N+S)}$$

If the quantity $(\partial T - \partial R)$ be positive the deviation of the transit in instrument is to the east of the meridian: if negative the deviation is to the west.

By the help of a table for any given latitude the value of $\frac{\cos. N \cos. S.}{\cos. L. \sin(N+S)}$ in numbers according to the arc of declination between the two stars observed we may obtain in every case the value of A.

The table which I have given is calculated for the latitude of Greenwich but will suit any other place at any far distant from that parallel. A correction is subjoined for the use of it in any other part

of England.

The arguments employed are the declination of the northern star found in the left hand column & the difference of declination found at the top of the table. Opposite the first & under the second is a number which being multiplied by the difference between the difference of the apparent right ascensions of the two stars & the difference of their observation transits, will give the value of Δ or the total deviation of the instrument in time, which multiplied by 15 will give the deviation in arc.

It must be carefully remembered that the time employed is supposed to be sidereal time, and that if the clock shows solar time, the interval between the observations must be corrected accordingly by adding the acceleration of the fixed stars for that interval.

Ex. July 1.st 1819 obser^d y Lyra
and γ Sagittarii. The first paper
at 18. 52. 37, 3 and the last at
18. 56. 4, 8 sidereal time.

App^t: R. A 18. 52. 9, 8 & 18. 55. 39, 7

Decⁿ: 32. 27 north & 27. 55. South.

$$R'' = 18. 55. 39, 7$$

$$R' = 18. 52. 9, 8$$

$$\partial R = \underline{\hspace{1.5cm}} 3. 29, 9$$

$$T'' = 18. 56. 4, 5$$

$$T' = 18. 52. 37, 3$$

$$\partial T = \underline{\hspace{1.5cm}} 3. 27, 2$$

Whence $(\partial T - \partial R) = -2, 7$. Now
the difference of declination is
 $= 60^{\circ}. 22'$ or say 60° & the declination
of N is about 32° . consequently
against that number and in
the column headed 60° . we shall
find 1.38; which being multiplied
by $-2, 7$ will give $-3, 73$ for the
deviation of the instrument on

same, & this being multiplied by 15 will give $-55^{\circ}.9$ for the deviation in arc. This value being negative shows that the deviation is to the west.

I shall now point out another important use to which these observations may be applied, viz to correcting the error of the clock at the time of observation. For after the quantity of the deviation is found the error of the clock may be determined by means of the transit of either of the stars employed, that is of either N or S but for the sake of uniformity in the investigations I shall confine my remarks to the northern star.

Let the observed time of the passage of N be denoted by T and the apparent RA of N by α and the error of the clock at the

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Let the observed time of the passage of N be denoted by T and the apparent RA of N by R and the error of the clock at the

time of observation by E . Then
(from the principles laid down
by Biot-)

$$E = (T - R) - A \frac{\sin(L-N)}{\cos. N}.$$

The value of $\frac{\sin(L-N)}{\cos. N}$ I have thrown
into numbers and placed in the
last column of the Table.

The application of the formula
is very simple: multiply the
number given in the table, by
the deviation of the transit inst:
in time, and deduct the product
from the difference between the
observed & the apparent right as-
-cension of the star: the difference
is the error of the clock, which
when negative shows that the
clock is too slow.

Observed $R^* = (\text{obs. sol. time} \pm \text{equat. of}$
time at noon) + acul. + $R \odot$ at noon.

Dec: of N.	Difference of Declinations					For Corr the Loc.
	50°	55°	60°	65°	70°	
50°	1,347	1,255	1,173	1,100	1,032	,04
49	1,373	1,277	1,192	1,113	1,044	,06
48	1,399	1,299	1,211	1,126	1,058	,09
47	1,425	1,321	1,230	1,139	1,071	,11
46	1,451	1,343	1,248	1,152	1,083	,13
45	1,476	1,365	1,266	1,165	1,095	,16
44	1,497	1,382	1,280	1,178	1,102	,18
43	1,518	1,399	1,294	1,191	1,110	,20
42	1,539	1,416	1,308	1,204	1,118	,22
41	1,560	1,433	1,322	1,217	1,126	,24
40	1,581	1,450	1,335	1,230	1,133	,26
39	1,597	1,462	1,344	1,237	1,138	,27
38	1,612	1,474	1,353	1,244	1,142	,29
37	1,628	1,486	1,361	1,247	1,144	,31
36	1,643	1,498	1,369	1,250	1,146	,33
35	1,658	1,509	1,376	1,253	1,147	,34
34	1,668	1,515	1,379	1,256	1,146	,36
33	1,678	1,521	1,382	1,260	1,144	,37
32	1,687	1,527	1,384	1,260	1,142	,39
31	1,697	1,533	1,387	1,256	-	,40
30	1,706	1,538	1,390	1,253	-	,42
29	1,709	1,540	1,387	1,250	-	,43
28	1,712	1,542	1,384	1,247	-	,45
27	1,716	1,542	1,382	1,244	-	,46
26	1,719	1,540	1,379	-	-	,47
25	1,722	1,538	1,376	-	-	,41

The values in this table (except
those in the last column) must be
multiplied by the following num-
bers, for any other parallel of la-
titude to the southward or north-
ward of Greenwich. viz^t

If south 1°	by	979
north 1°	-	1,023
- 2°	-	1,047
- 3°	-	1,072
- 4°	-	1,099

that in no part of England will
correction amount to one tenth
if within two degrees of the la-
titude of Greenwich, it will not
amount to one twentieth.

The last column is adapted to
the latitude of Greenwich only.

Short instructions for the use of the table.

Subtract the arc of declination between the two stars on the top of the table, & the declination of the most northern star in the left hand column, & take out the number at the intersection of the two columns.

Let T be the difference of the observed times of the transits, converted if necessary into sidereal time, by adding the acceleration of the fixed stars for the interval.

Let A be the difference of apparent right ascensions then $(T - A) = \text{multiplier}$ (carefully attending to the signs) of the number taken from the table.

If the product be $+$ the instrument is to the east, if $-$ to the west of the meridian.

$(R'' - R') = \partial R = \text{diff. of right ascen}^n$

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28	1,712	1,542	1,384	1,247	-	,45
27	1,716	1,542	1,382	1,244	-	,46
26	1,719	1,540	1,379	-	-	,47
25	1,722	1,538	1,376	-	-	,4

The values in this table (except those in the last column) must be multiplied by the following numbers, for any other parallel of latitude to the southward or northward of Greenwich: viz:

If south 1°	by	, 979
north 1°		1, 023
2°		1, 047
3°		1, 072
4°		1, 099

So that in no part of England will the correction amount to one tenth & if within two degrees of the latitude of Greenwich, it will not amount to one twentieth.

The last column is adapted to the latitude of Greenwich only.

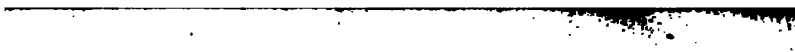
Short instructions for the use of the table.

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Let T be the difference of the observed times of the transits, converted if necessary into sidereal time, by adding the acceleration of the fixed stars for the interval.

Let A be the difference of apparent right ascensions then $(T - A) = \text{multiplier}$ (carefully attending to the signs) of the number taken from the table.

If the product be $+$ the instrument is to the east, if $-$ to the west of the meridian.





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